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T. LUCRETIUS CARUS

OF THE

NATURE of *THINGS*,

IN SIX BOOKS.

ILLUSTRATED with

Proper and Uſeful NOTES.

Adorned with COPPER-PLATES,

Curiouſly ENGRAVED

By *GUERNIER*, and others.

Carmina ſublimis *tunc ſunt peritura* Lucreti
Exitio Terras cum dabit una Dies. OVID.

VOL. II.

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BRITISH MUSEUM

A NEW TRANSLATION OF *T. Lucretius Carus*, OF THE NATURE *of* THINGS.

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THE ARGUMENT OF THE FOURTH BOOK.

THIS Book begins with a Repetition of the ſame Compariſon the Author introduced in the Firſt Book, v. 925, *to relieve the Mind of his* Memnius *from the Roughneſs and Unpleaſantneſs of the Subject upon which he was diſputing, and to beſpeak the Docility and Attention of his Readers. He then enters upon his Subject, which treats of the Senſation of Animals, as well when they are awake, as when they are ſleeping; that is, to uſe the Expreſſion of* Lucretius, *he explains the Senſes of the Mind, as well as thoſe of the Body; he begins with the Images of Things, and inſiſts ſtrenuouſly, that all Senſation is made by them. He ſays, that certain moſt tenuious and ſubtil Images are continually flowing from the Surface of all Bodies, that they fly about in the Air, but nevertheleſs are inviſible, unleſs they be reflected upon the Sight from Mirrours or Water. Then he deſcribes the extreme Tenuity of ſuch Images, and from thence takes occaſion to confirm the Doctrine he taught in the firſt Book concerning the Exiguity of his Atoms. He lays down two Sorts of Images, one that of their own Accord are bred in the Clouds, which repreſent the Images of Giants, or of Mountains,*

tains, or of ſome monſtrous Beaſt; the other, ſuch as fly off from the Surface of Bodies, and are, as it were, the Films or Membranes of them. He calls them Exuviæ Rerum, *and then teaches that theſe* Exuviæ *are perpetually flying off from the Surface of all Bodies, and are carried through the Air with ſuch wonderful Celerity, that they exceed even the Rays of the Sun in Swiftneſs. The* Sight *being the principal of the Senſes, he begins with that, and teaches that it proceeds from the Incurſion and Striking of thoſe Images upon the Eyes, in the ſame manner as the other Senſes are cauſed by Corpuſcles, that ſtrike from without upon the ſeveral Organs of Senſation. He explains in the mean time all Things that relate to the efficient Cauſes of Sight, and propoſes ſeveral Problems relating to Viſion, which he ſolves with Truth and Propriety. But that no one, from the Explication of theſe Problems, might accuſe the Senſes of Deception or Fallacy, he at large aſſerts their Certainty, and by the way takes Occaſion to confute the* Sceptick, *and lays it down as an indiſputable Maxim, that all Truth is grounded on the Certainty and on the Belief of the Senſes. He then proceeds to the other Senſes, and inſiſts that* Voice *and* Sound *are corporeal Images, which ſtrike the Ear, and are the Cauſe of* Hearing. *He then explains the Nature of* Voice, *and the Manner of its Formation, and gives a Reaſon why the ſame Voice is heard by many Perſons at once, and treats of what an Eccho is, and what is the Cauſe of it. He then gives Inſtructions concerning* Savour, *and* Taſte, *and* Odour, *and* Smell; *particularly what Savour and Odour are, and why all do not perceive them; why the ſame Food is ſweet to ſome, and bitter to others; why one Odour is more agreeable to one, than it is to another; and why the ſame Voice ſtrikes a Terror into ſome, and is agreeable, at leaſt not frightful, to others. He proceeds to treat of Imagination and*

Cogita-

Cogitation, which he ſays are made likewiſe by the ſame moſt ſubtil Images of Things preſenting themſelves to the Mind: He then explains ſeveral Problems relating to Cogitation; why, for Example, we ſeem to ſee in our Dreams Perſons who are dead; why the Images of Things ſeem to tarry with us, while we are thinking of the Things whoſe Images they are; why we think of a ſudden upon whatever we will; why we ſeem to ourſelves to move in our Dreams. He ſays the Tongue, the Eyes, the Noſtrils, the Ears, and all the Organs of Senſation were made before the Uſe of them, quite contrary to what has happened in regard to all Artificial Things, the Invention of which ſucceeded the foreſeen Want and Uſefulneſs of them. He gives the Reaſon why Animals ſeek after their own Meat and Drink, why we move whenever we pleaſe, and explains what it is that actuates and drives forward the Bulk of our Bodies: He treats of Sleep and Dreams, and teaches in the firſt Place, how Sleep *is cauſed in us, and in all other Creatures; then he aſſigns ſeveral Cauſes of different Dreams: At laſt, he falls upon the Subject of* Venery; *and to the End of the Book continues to treat of Love, of Barrenneſs, of Fruitfulneſs, and other Points relating to Generation, with more Freedom perhaps than is becoming: But Natural Philoſophers generally allow themſelves uncommon Liberties upon ſuch Occaſions.*

T. Lucretii Cari

DE RERUM NATURA.

LIBER QUARTUS.

AVia Pieridum perago loca nullius antè
Trita ſolo, juvat integros accedere fonteis;
Atq; haurire: juvatq; novos decerpere flores,
Inſignemque Meo capiti petere inde coronam,
Unde priùs Nulli velârint tempora Muſæ.
Primùm quòd magnis doceo de rebus, & arctis
Religionum animos nodis exſolvere pergo;
Deinde, quòd obſcura de re tam lucida pango
Carmina, muſæo contingens cuncta lepore:
Id quoque enim non ab nulla ratione videtur.
Nam veluti Pueris abſynthia tetra Medentes,

T. *Lucretius Carus*,

OF THE

NATURE *of* THINGS.

THE

FOURTH BOOK.

[a] INSPIR'D, I wander o'er the Muſes Seats, of difficult Acceſs, and yet untrod; I love to approach the pureſt Springs, and thence to draw large Draughts; I love to crop freſh Flowers, and make a noble Garland for my Head from thence, where yet the Muſes never bound another's Temples with a Crown like mine. And firſt I write of lofty Things, and ſtrive to free the Mind from the ſevereſt Bonds of what Men call Religion; then my Verſe I frame ſo clear, altho' my Theme be dark; ſeaſoning my Lines with the Poetic Sweets of Fancy, and Reaſon juſtifies the Method; for as Phyſicians when

[a] The firſt twenty-nine Lines of this Book, in which the Poet invites the Reader's Attention, are to be found near the latter End of Book the Firſt.

Cùm dare conantur, priùs oras pocula circùm
Contingunt mellis dulci, flavoque liquore,
Ut Puerorum ætas improvida ludificetur
Labrorum tenus, interea perpotet amarum
Abſynthi laticem, deceptaque non capiatur;
Sed potiùs tali tactu recreata valeſcat.
Sic Ego nunc, quoniam hæc Ratio plerumq; videtur
Triſtior eſſe, quibus non eſt tractata, retroque
Volgus abhorret ab Hac; volui tibi ſuaviloquenti
Carmine Pierio rationem exponere noſtram,
Et quaſi Muſeo dulci contingere melle;
Si tibi forte animum tali ratione tenere
Verſibus in noſtris poſſem, dum perſpicis omnem
Naturam rerum; ac perſentis utilitatem.
Sed quoniam docui, cunctarum Exordia rerum
Qualia ſint, & quam variis diſtantia formis
Sponte ſua volitent æterno percita motu:
Quoque modo poſſint res ex his quæque creari:
Atque Animi quoniam docui natura quid eſſet,
Et quibus è rebus cum Corpore compta vigeret;
Quove modo diſtracta rediret in Ordia prima:
Nunc agere incipiam tibi, quod vehementer ad has res
Attinet, eſſe ea, quæ rerum Simulacra vocamus:
Quæ quaſi Membranæ ſummo de corpore rerum
Dereptæ volitant ultro citroque per auras:

they would prevail on Children to take down a bitter Draught of Wormwood, firſt tinge the Edges of the Cup with ſweet and yellow Honey, that ſo the Children's unſuſpecting Age, at leaſt their Lips, may be deceived, and take the bitter Juice; thus harmleſly betrayed, but not abuſed, by taſting thus they rather have their Health reſtored: So I, becauſe this Syſtem ſeems ſevere and harſh, to ſuch who have not yet diſcerned its Truth, and the common Herd are utterly averſe to this Philoſophy, I thought it fit to ſhew theſe rigid Principles in Verſe, ſmooth and alluring, and tinge them, as it were, with ſweet Poetic Honey, thus to charm your Mind with my ſoft Numbers, till you view the Nature of all Things clearly, and perceive the Uſefulneſs and Order they diſplay.

[b] Now ſince I taught what are the firſt Principle of all Things, and how they differ in their Figures, and wander of their own accord, urged on by an eternal Motion, and how of them all Beings firſt are formed; and I have ſhewn the Nature of the Mind, of what Seeds compoſed, and how it exerts itſelf united with the Body, and ſeparated from it, how it returns to its firſt Principles again: I ſhall now begin to explain what is of the neareſt Concern to theſe Inquiries, and prove that there are what we call the *Images* of Things, which, like Membranes, or Films, flowing from the Surface of Bodies, fly every Way abroad through the Air. Theſe, while we are

[b] After he has recited the Subjects of his Inquiries in the preceding Books, he ſays, he will now treat of the Images, which, like Films and Membranes of Bodies, are perpetually flowing from the Surface of Things, and preſenting their Species and Figures to us. If they come whole, and without Mixture, we then perceive Things that truly have a Being; if they come maimed, inverted, or joined to one another, from thence proceed the Phantaſms of Centaurs, and the like Monſters, and ſometimes too the Spectres of the Dead; for the Soul, we are told, dies with the Body.

awake,

Atque eadem nobis vigilantibus obvia menteis
Terrificant, atque in ſomnis, cùm ſæpe figuras
Contuimur miras ſimulacraque luce carentum;
Quæ nos horrificè languenteis ſæpe ſopore
Excierunt: Ne forte Animas Acherunte reamur
Effugere, aut Umbras inter vivos volitare:
Neve aliquid noſtri poſt mortem poſſe relinqui,
Cùm Corpus ſimul, atque Animi natura peremta,
In ſua diſceſſum dederunt Primordia quæque.
Dico igitur, rerum Effigias, tenuiſque figuras
Mittier ab rebus ſummo de corpore earum;
Quæ quaſi Membrana, vel Cortex nominitanda 'ſt,
Quòd ſpeciem, ac formam ſimilem gerit ejus Imago,
Quojuſcunque cluet de corpore fuſa vagari.
Id licet hinc quamvis hebeti cognoſcere corde;
Principio, quoniam mittunt in rebus apertis
Corpora res multæ, partim diffuſa ſolutè,
Robora ſeu Fumum mittunt, igneſque Vaporem:
Et partim contexta magis, condenſaq; ut olim
Cùm veteres ponunt tunicas æſtate Cicadæ;
Et Vituli cùm membranas de corpore ſummo
Naſcentes mittunt, & item cùm lubrica Serpens
Exuit in ſpinis veſtem: Nam ſæpe videmus
Illorum ſpoliis vepreis volitantibus auctas.
Hæc quoniam fiunt, tenuis quoque debet Imago
Ab rebus mitti ſummo de corpore earum.
Nam, cur illa cadant magis, ab rebuſque recedant,
Quàm quæ tenuia ſunt, hiſcendi 'ſt nulla poteſtas.
Præſertim cum ſint in ſummis corpora rebus
Multa minuta, jaci quæ poſſint ordine eodem
Quo fuerint, veterem & formæ ſervare figuram;

Et

awake, often ruſh upon our Minds and terrify us, and likewiſe ſleeping, when we think we ſee ſtrange Phantoms and Spectres of the Dead, which ſhake us horribly when faſt aſleep. For ſure we are not to imagine, that the Souls are broke looſe out of Hell, or that the Ghoſts hover and play about the Living, or that any Part of us remains after Death; ſince the Soul and Body, once diſſolved, return ſeverally into their firſt Seeds from whence they were produced.

I SAY then, that Images or tenuious Figures are always flowing, or ſent out from the Surface of Bodies, which may be called the Membranes or the Bark of Things; and theſe ſeveral Images bear the ſame Shape and Form, as the particular Body from whence they flow.

THIS requires no extraordinary Apprehenſion to conceive, for to give a plain Inſtance; many Things emit Bodies from themſelves, ſome more rare and diffuſed, as Wood diſcharges Smoke, and Fire a Vapour; others more denſe and compact, as when Graſhoppers in Summer caſt their old Coats, and Calves new-born drop the Pellicules in which they are incloſed; or as the Winding Snake leaves his Skin among the Thorns, for the Briers we often ſee adorned with their light Spoils. This being ſo, it follows, that a very ſubtle Image may fly off from the utmoſt Surface of Bodies; for there can be no Reaſon given, why theſe, and not others more thin than theſe, may not fall off and be diſcharged; eſpecially ſince in every Surface there are many minute Corpuſcles, that may be caſt off in the very ſame Order they are ranged in the Body, and ſo preſerve their [c] old Form and Figure; and

[c] That is, the Image of their Form; for Form, according to *Epicurus*, is that which continually remains in the Surface of the Body, while the Image, as a Spoil, is continually flying away.

they

Et multo citiùs, quantò minùs endopediri
Pauca queunt, & ſunt in prima fronte locata.
Nam certè jaci, atque emergere multa videmus,
Non ſolùm ex alto, penituſque, ut diximus ante,
Verùm de ſummis ipſum quoque ſæpe colorem:
Et volgò faciunt id lutea, ruſſaque Vela,
Et ferrugina, cùm magnis intenta Theatris
Per malos volgata, trabeiſque trementia flutant:
Namque ibi confeſſum Caveaï ſubter, & omnem
Scenaï ſpeciem, Patrum, Matrumque, Deorumque,
Inficiunt, coguntque ſuo fluitare colore:
Et quantò circum mage ſunt incluſa Theatri
Mœnia, tam magis hæc intus perfuſa lepore
Omnia conrident conrepta luce diei.
Ergo Lintea de ſummo cùm corpore fucum
Mittunt, Effigias quoque debent mittere tenueis
Res quæque, ex ſummo quoniam jaculantur utræque.
Sunt igitur, jam formarum veſtigia certa,
Quæ vulgò volitant ſubtili prædita filo,
Nec ſingillatim poſſunt ſecreta videri.
Præterea, omnis Odos, Fumus, Vapor, atque aliæ res
Conſimiles, ideo diffuſæ rebus abundant,
Ex alto quia dum veniunt intrinſecus ortæ,
Scinduntur per iter flexum; nec recta viarum
Oſtia ſunt, qua contendunt exire coortæ.
At contrà, tenuis ſummi membrana Coloris
Cum jacitur, nihil eſt, quod eam diſcerpere poſſit,
In promptu quoniam 'ſt in prima fronte locata.

they are the readier to fly off, becauſe they are ſmall, and not ſo liable to be ſtopped, and are placed likewiſe upon the utmoſt Surface.

FOR it is certain, that many Particles are not ſent out and get looſe only from the middle and inward Parts, as we ſaid before, but [d] Colour itſelf is diſcharged from the Surface of Bodies. And ſo Curtains, yellow, of a deep red, or blew (as they hang in lofty Theatres, waving expanded on the Beams, and flowing on the Pillars with the Wind) do this; for they ſtain the Stage, the Scenes, the Audience, Senators, Matrons, and the Images of the Gods, and cauſe them to wave in their own gaudy Dye; and the more the Walls of the Theatre are darkned, and the Day-light ſhut out, every Thing within is ſpread over and ſhines out with a brighter Luſtre. Since therefore theſe Curtains diſcharge their Colours from the Surface, all Things, by the ſame Rule, may emit ſubtle Images, for thoſe are thrown off from the Surface as well as theſe.

THERE are therefore certain Images of Things, of a fine and ſubtle Contexture, that are always flying about, and are impoſſible ſeverally to be diſcovered by the Eye.

BESIDES, all Smell, Smoke, Vapour, and other ſuch Things fly off from Bodies in a diffuſed and ſcatter'd Manner, becauſe as they paſs to the Outſide of Bodies from within, they are broken and divided by the crooked Pores they muſt make their Way through; the Road they are to take is full of Windings, as they attempt to riſe and fly out; but, on the contrary, when the Membrane of Colour is thrown off, there is nothing to diſorder it, becauſe it lies diſentangled upon the very Surface.

AND

[d] Colours get looſe and are reflected from the Images of Things

Poſtremo, in Speculis, in Aqua, Splendoreque in omni
Quæcunque apparent nobis Simulacra neceſſe 'ſt,
Quandoquidem ſimili ſpecie ſunt prædita rerum,
Eſſe in imaginibus miſſis conſiſtere eorum:
Nam cur illa cadant magis, ab rebuſque recedant
Corpora res multæ quæ mittunt Corpore aperto,
Quàm quæ tenuia ſunt, hiſcendi'ſt nulla poteſtas.
Sunt igitur tenues formarum, conſimileſque
Effigiæ, ſingillatim quas cernere nemo
Cùm poſſit; tamen aſſiduo, crebroque repulſu
Rejectæ, reddunt Speculorum ex æquore viſum:
Nec ratione alia ſervari poſſe videntur.
Tantopere, ut ſimiles reddantur quoique figuræ:
Nunc age, quàm tenui natura conſtet Imago,
Percipe: & imprimis quoniam Primordia tantum
Sunt infra noſtros ſenſus, tantòque minora,
Quàm quæ primùm oculi cæptant non poſſe tueri.
Nunc tamen id quoque uti confirmem, Exordia rerum
Cunctarum quàm ſint ſubtilia, percipe paucis.

And then [e] ſince the Forms that appear to us in Looking-glaſs, in Water, and all poliſhed Bodies, are exactly like the Things whoſe Images they are, they muſt neceſſarily be compoſed of the Images that flow from the Subſtance of the Things themſelves; for why thoſe Particles ſhould fall away, and be diſcharged from Bodies which are diſcovered by the Eye, rather than theſe that are more thin and ſubtle, no Reaſon can properly be aſſigned.

There are therefore tenuious and fine Shapes of the ſame Figure with the Things themſelves, which, tho' they cannot ſingly be diſtinguiſhed by the Sight, yet being reflected, and ſwiftly and conſtantly repelled from the ſmooth Plane of the Glaſs, become viſible, nor can any other Reaſon be ſo properly offered, why Forms ſo like the Things are returned to us.

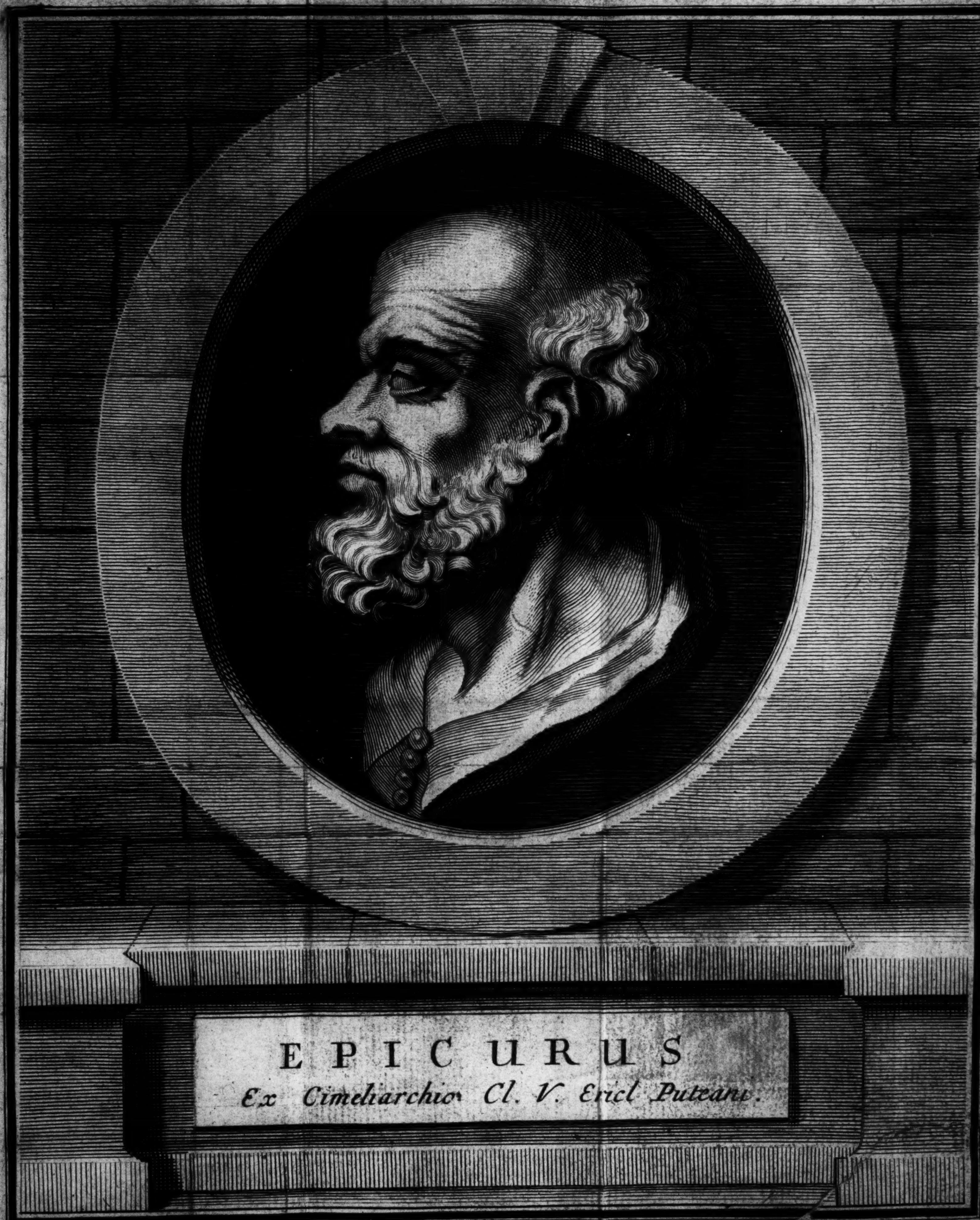
And now conceive, if you can, of what a tenuious and ſubtle Nature an Image conſiſts; and for this Reaſon, in the firſt place, becauſe the Seeds of Things are ſo much beyond the Reach and Diſcovery of our Senſes, and are infinitely leſs than thoſe Bodies that eſcape the Obſervation of the moſt curious Eye; as a Proof, how ſubtle the firſt Principles of Things are, attend to theſe ſhort Obſervations.

Things in ſuch a manner, as argues likewiſe the Direption and getting off of Images.

[e] Since the Images, we ſee in Mirrours, in Waters, or in any ſmooth and poliſhed Body, are exactly like the Things whoſe Images they are, therefore thoſe Forms muſt neceſſarily be compoſed of the Images that flow from the Subſtances of the Things themſelves; the very utmoſt Film, which before adher'd to the whole Thing, is ſeparated from it, as it were a Membrane, and ſtrikes into the Glaſs or Water. We are to obſerve, that the Image of each Thing, that is ſeen in the Glaſs, or in Water, is not ſingle and one only, but many, which, nevertheleſs by being reflected to the Eyes by a neverceaſing Reverberation, ſeem not to be many, but only one.

And

Primùm Animalia ſunt jam partim tantula, eorum
Tertia pars nulla ut poſſit ratione videri.
Horum Inteſtinum quodvis quale eſſe putandum 'ſt?
Quid? Cordis globus aut Oculi? quid? Membra? quid? Artus?
Quantula ſunt? quid? præterea Primordia quæque,
Unde Anima, atque Animi conſtet natura neceſſum 'ſt,
Nonne vides, quam ſint ſubtilia, quámque minuta?
Præterea, quæcunque ſuo de corpore odorem
Exſpirant acrem, Panaces, Abſinthia tetra,
Abrotonique graves, & triſtia Centaurea:
Horum unumquodvis leviter ſi fortè ciebis,
Quamprimum noſcas rerum Simulacra vagare
Multa modis multis, nulla vi, caſſaque ſenſu.
Quorum quantula pars ſit Imago, dicere nemo 'ſt
Qui poſſit, neque eam rationem reddere dictis.
Sed ne fortè putes ea demum ſola vagare,
Quæcunque ab rebus rerum Simulacra recedunt:
Sunt etiam, quæ ſponte ſua gignuntur, & ipſa
Conſtituuntur in hoc cœlo, qui dicitur aër:
Quæ multis formata modis ſublimè feruntur,
Nec ſpeciem mutare ſuam liquentia ceſſant:
Et quoiuſque modi formarum vertere in ora:
Ut nubeis facilè interdum concreſcere in alto
Cernimus, & mundi ſpeciem violare ſerenam,
Aëra mulcenteis motu: Nam ſæpe Gigantum


EPICURUS
Ex Cimeliarchio Cl. V. Erici Puteani.

AND firſt there are Animals ſo exceeding ſmall, that one third Part of them cannot poſſibly by any means be diſcover'd. What are you to conceive of the Bowels of theſe Creatures? Of their little Hearts and Eyes? What of their Members? What are you to think of their Limbs? How very ſmall are they? What beſides of the Seeds which compoſe the Soul and Mind, don't you imagine how ſubtle and minute they are? *The Subtilty of the Images.*

BESIDES, [f] Herbs that exhale a ſharp Smell from their Bodies, ſuch as All-heal, bitter Wormwood, ſtrong Southernwood, and ſour Centaury, if you ſhake any of theſe ever ſo lightly, you may be ſure many Particles fly off, and ſcatter every way, but without Force, and too weak to affect the Senſe; yet how ſmall and ſubtle are the Images that are formed from theſe, no one can conceive or expreſs.

[g] BUT leſt you ſhould think, that the Images that fly off from the Surface of Bodies, are the only Things that wander abroad, there are other Shapes that are faſhioned of their own accord, and are produced in the lower Region we call the Air; theſe are framed in various Manners, are carried upward, and being very ſubtle and leſs compact in their Contexture, are ever changing their Figure, and aſſume all Variety of Forms. Thus we ſee the Clouds ſometimes thicken in the Sky, darkning the ſerene Face of the Heavens, and wounding the Air by the Violence of their Motion; now the Shape of Giants ſeem to fly abroad, *Prodigies.*

[f] Since an Image conſiſts only of thoſe Particles that fly away from the Surface of Bodies, it ſurpaſſes all Belief, how ſubtle and tenuious an Image muſt be, eſpecially ſince in a great Length of Time, nothing can be perceived to be exhaled or worn away.

[g] He ſpeaks now of another Sort of Images, which are certain Compoſitions or Coagmentations, that are formed in the Air of their own accord as ſo many Clouds, and do not indeed flow from the Things which they repreſent.

Ora volare videntur, & umbram ducere latè :
Interdum magni montes, avolſaque ſaxa
Montibus anteire, & ſolem ſuccedere præter :
Inde alios trahere, atque inducere bellua nimbos.
Nunc ea quàm facili, & celeri ratione genantur,
Perpetuòque fluant ab rebus, lapſaque cedant.
Semper enim ſummum quidquid de rebus abundat,
Quòd jaculentur : & hoc alias cùm pervenit in res,
Tranſit, ut in primis Veſtem : Sed in aſpera Saxa,
Aut in materiem ut Ligni pervenit ; ibi jam
Scinditur, ut nullum Simulacrum reddere poſſit.
At cùm, ſplendida quæ conſtant, oppôſta fuerunt,
Denſaque, ut in primis Speculum 'ſt : Nihil accidit horum,
Nam neque uti veſtem poſſit tranſire, neque ante
Scindi, quàm meminit lævor præſtare ſalutem.
Quapropter fit, ut hinc nobis Simulacra genantur,
Et quamvis ſubitò, quovis in tempore, quamque
Rem contra Speculum ponas, apparet Imago :
Perpetuò fluere ut noſcas è corpore ſummo
Texturas rerum tenueis, tenueiſque figuras.
Ergo multa brevi ſpatio Simulacra genuntur,
Ut meritò celer his rebus dicatur origo.
Et quaſi multa brevi ſpatio ſummittere debet
Lumina Sol, ut perpetuò ſint omnia plena :
Sic à rebus item ſimili ratione neceſſe 'ſt
Temporis in puncto rerum Simulacra ferantur

Multa

and project their Shadows all round; and then huge Hills, and Rocks torn from the Mountain-Top, are born before the Sun, and hide his Light. Others again advance and repreſent the Shape of Monſters wandring through the Sky.

Now learn in how eaſy and ſwift a Manner *Reflection.* theſe Images are produced; how they continually fly and fall off from the Surface of Bodies; for there is always a Store of Forms upon the Outſide of Things ready to be thrown off: Theſe when they light upon ſome Things paſs through them, as a Garment for inſtance; but when they ſtrike upon ſharp Rocks, or upon Wood, they are immediately broken and divided, ſo that no Image can be reflected; but when they are oppoſed by denſe and poliſhed Bodies, ſuch as Looking-glaſs, then nothing of this happens; for they can neither paſs through this as through a Garment, nor are they divided, before the Glaſs preſerves their Figure perfect and intire. Hence it is, that theſe Forms are preſented to our Sight; and place a Thing ever ſo ſuddenly, and in a Moment of Time, before the Glaſs, and the Image inſtantly appears. So that you find, there are ſubtle Textures of Things, and ſubtle Images continually flowing from the Surface of Bodies; and therefore many of theſe Forms are produced in a ſhort Space of Time, and may be juſtly ſaid to receive their Being from a very ſwift Motion.

[h] And as the Sun is obliged to emit many of its Rays in an Inſtant, that the whole Air might be full of Light, ſo many Images of Things muſt needs be carried off in the ſmalleſt Point of Time,

[h] That all Things may be full of Light, Rays muſt be continually emitted from the Sun; for the ſame Reaſon Images muſt likewiſe be perpetually flying away from Bodies; for which way ſoever you turn the Mirrour, the Images of the oppoſite Things appear, nor do they ever diſappear ſo long as thoſe Things keep their Places.

Multa modis multis in cunctas undique parteis :
Quandoquidem Speculum queiſcunque obvertimus oris,
Res ibi reſpondent ſimila forma, atque colore.
Præterea, modò quom fuerit liquidiſſima cœli
Tempeſtas perquàm ſubitò fit turbida fœde
Undique, uti tenebras omneis Acherunta rearis
Liquiſſe, & magnas cœli compléſſe cavernas.
Uſque adeò tetra nimborum nocte coorta,
Impendent atræ formidinis ora ſuperne.
Quorum quantula pars ſit Imago, dicere nemo'ſt,
Qui poſſit, neque eam rationem reddere dictis.
Nunc age, quàm celeri motu Simulacra ferantur,
Et quæ mobilitas ollis tranantibus auras
Reddita ſit, longo ut ſpatio brevis hora teratur,
In quemcunque locum diverſo numine tendunt,
Suavidicis potiùs, quàm multis verſibus edam :
Parvus ut eſt Cycni melior canor, illum Gruum quàm
Clamor, in ætheriis diſperſus nubibus Auſtri.
Principio, perſæpe leveis res, atque minutis
Corporibus factas, celereis licet eſſe videre.
In quo jam genere'ſt Solis lux, & vapor ejus,
Propterea quia ſunt è primis facta minutis :
Quæ quaſi truduntur, perque Aëris intervallum
Non dubitant tranſire, ſequenti concita plaga.
Suppeditatur enim confeſtim lumine lumen,
Et quaſi protelo ſtimulatur fulgure fulgur,
Quapropter Simulacra pari ratione neceſſe 'ſt
Immemorabile per ſpatium tranſcurrere poſſe
Temporis in puncto : primùm quòd parvola cauſa
Eſt procul à tergo quæ provehat, atq; propellat :
Deinde, quòd uſque adeo textura prædita rara
Mittuntur, facilè ut quaſvis penetrare queant res,
Et quaſi permanare per Aëris intervallum.

Præterea,

and ſcatter'd every way abroad; for place your Glaſs in what manner you pleaſe, the Things appear in the ſame Colour and Figure they really are.

So often, when the Face of the Sky is moſt ſerene and bright, it becomes on all Sides black and horrid of a ſudden, that you would think the whole Body of Darkneſs had left the Regions below, and filled the wide Arch of Heaven; ſo dreadful does the Night appear from driving Clouds, and ſcatters gloomy Terror from above; but how ſmall in Compariſon of theſe Clouds, are the Images of Things, no one can conceive or expreſs.

The Swiftneſs of the Images

AND now, with how ſwift a Courſe theſe Images are carried on, how ſuddenly they make their Paſſage through the Air, how they out-ſtrip dull Time, wherever by various Motion they intend their Way, I chooſe in ſweeteſt Numbers than in tedious Verſe to ſhew: As the Swan's ſhort Song is more melodious than the harſh Noiſe of Cranes, ſcattered by Winds through all the Air.

FIRST then; we obſerve, that light Things, that are formed of ſmall Particles, are very ſwift in their Motion; of this Sort, are the Rays and Heat of the Sun; becauſe they are compoſed of very minute Seeds, which are eaſily thruſt forward, as it were, through the interjacent Air, the following urging on the Part that went before; for one Beam of Light is inſtantly ſupplied by another, and every Ray is preſſed on by another behind. By the ſame Rule, the Images may paſs through an unaccountable Space in a Moment of Time: Firſt, becauſe there is always a Force behind to drive and urge them forward, and then their Texture, as they fly off, is ſo thin and ſubtle, that they can pierce through any Bodies, and, as it were, flow through the Air that lies between.

 BESIDES,

Præterea, ſi, quæ penitus Corpuſcula rerum
Ex alto in terras mittuntur, Solis uti lux,
Ac vapor, hæc puncto cernuntur lapſa diei
Per totum cœli ſpatium diffundere ſeſe:
Perque volare mare, ac terras, cœlumque rigare
Quòd ſupera 'ſt: Ubi tam volucri hæc levitate feruntur.
Quid? quæ ſunt igitur jam prima in fronte parata
Cum jaciuntur, & emiſſum res nulla moratur,
Nonne vides citiùs debere, & longiùs ire:
Multiplexque loci ſpatium tranſcurrere eodem
Tempore, quo Solis pervolgant lumina cælum?
Hoc etiam in primis ſpecimen verum eſſe videtur,
Quàm celeri motu rerum Simulacra ferantur,
Quòd ſimul ac primùm ſub divo ſplendor Aquaï
Ponitur, extemplo, cælo ſtellante, ſerena
Sidera reſpondent in Aqua radiantia mundi.
Jamne vides igitur, quàm puncto tempore imago
Ætheris ex oris ad terrarum accidat oras?
Quare etiam atque etiam mitti hæc fateare neceſſe 'ſt
Corpora, quæ feriant oculos, viſumque laceſſant:
Perpetuoque fluunt certis ab rebus Odores:-
Frigus ut à fluviis, Calor à ſole, Æſtus ab undis

[i] Besides, if thoſe Corpuſcles that lie in the inward Parts of Bodies are diſcharged from above down upon the Earth, ſuch as the Light and Heat of the Sun; if theſe, we obſerve, deſcend in a Point of Time, and ſpread themſelves through all the Expanſion of the Air, and fly over the Sea, the Earth, and the upper Regions of the Heavens; if theſe are diffuſed with ſuch wonderful Celerity, what ſhall we ſay? Thoſe Particles that are always ready upon the utmoſt Surface of Things, when they are thrown off, and have nothing to obſtruct their Motions, don't you ſee how thoſe may fly ſwifter, and go further, and paſs through a much greater Space in the ſame Time than the Beams of the Sun take up to make their way through.

Another notable Inſtance, which fully proves with how ſwift a Motion the Images are carried on, is this; As ſoon as a Bowl of clear Water is placed in the open Air, in a Star-light Night, the ſhining Stars are ſeen twinkling in the ſtill Water; Don't you ſee therefore in what a Point of Time the Images deſcend upon the Earth from the upper Regions of the Air?

Again then, and again, you muſt allow that [k] Particles are perpetually flowing from the Surface of Bodies, which preſent themſelves to our Eyes and ſtrike our Sight: From ſome Bodies a Train of Smells are always flying off; ſo Cold is emitted from the Rivers, Heat from the Sun, a

[i] The Images paſs more ſwiftly than the Rays of the Sun, becauſe they are more ſubtle, and what conduces much to their Celerity, they flow from the Surface of Things, and eaſily diſengage themſelves and get off; but Heat and Light are emitted from the inward Parts of the Sun, and therefore cannot ſo eaſily get free.

[k] This Flow or Streaming of Images into the Eyes, he ſays, muſt be granted, becauſe certain Effluviums from other Things inſinuate themſelves into all the other Senſes.

Æquoris, exeſor mærorum litora circùm.
Nec variæ ceſſant Voces volitare per auras:
Denique in os ſalſi venit humor ſæpe Saporis,
Cùm mare verſamur propter: Dilutaqne contra
Cùm tuimur miſceri abſinthia, tangit amaror.
Uſque adeo omnibus ab rebus res quæque fluenter
Fertur: & in cunctas dimittitur undique parteis,
Nec mora, nec requies inter datur ulla fluendi:
Perpetuò quoniam ſentimus, & omnia ſemper
Cernere, Odorari licet, & ſentire Sonorem.
Præterea, quoniam manibus tractata figura
In tenebris quædam, cognoſcitur eſſe eadem, quæ
Cernitur in luce, & claro candore; neceſſe 'ſt
Conſimili cauſa Tactum, Viſumque moveri.
Nunc igitur, ſi Quadratum tentamus, & id nos
Commovet in tenebris; in luci quæ poterit res
Accidere ad ſpeciem, Quadrata niſi ejus imago?
Eſſe in Imaginibus quapropter cauſa videtur
Cernendi, neque poſſe ſine his res ulla videri.
Nunc ea, quæ dico, rerum Simulacra feruntur
Undique, & in cunctas jaciuntur didita parteis;
Verùm, nos oculis quia ſolis cernere quimus,
Propterea fit, uti, ſpeciem quò vertimus, omnes
Res ibi eam contra feriant forma, atque colore.
Et quantùm quæque à nobis res abſit, Imago
Efficit ut videamus, & internoſcere curat.
Nam cùm mittitur, extemplo protrudit, agitque
Aëra, qui inter ſe cumque 'ſt, oculoſque locatus;

ſalt Vapour from the Water of the Sea that eats through Walls along the Shore, and Sounds are always flying through the Air. Laſtly, As we walk upon the Strand a ſalt Taſte offends our Mouth; and when we ſee a Bunch of Wormwood bruiſed, the Bitterneſs ſtrikes upon the Palate: So plain it is that ſomething is continually flowing off from all Bodies, and is ſcattered all about; there is no Intermiſſion; the Seeds never ceaſe to flow, becauſe we ſtill continue to feel, to ſee, to ſmell, and hear.

BESIDES, ſince any Figure we feel with our Hands in the Dark, we know to be the ſame we before ſaw by Day, and in the cleareſt Light, the Touch and Sight muſt needs be moved by the ſame Cauſe; and therefore, if we feel a quadrangular Figure, and diſtinguiſh its Shape in the Dark, what can preſent that Shape to us in the Light but its quadrangular Image? The Cauſe therefore of our Sight muſt ariſe from the Images, nor indeed can we diſtinguiſh any thing without them.

Now theſe Images I am ſpeaking of are carried about every Way, and are thrown off and ſcattered on all Sides; and therefore it is, ſince with our Eyes alone we are able to ſee, that which way ſoever we turn our Eyes, the Objects ſtrike upon them in their proper Form and Colour.

How we diſcover the Diſtance of Objects.

THE Image likewiſe is the Cauſe that we diſcover, and takes care to ſatisfy us at what [1] Diſtance Bodies are removed from us; for as ſoon as it is emitted, it inſtantly thruſts forward, and drives on the Air that is placed between itſelf and

[1] The Image ſtriving to get to the Eyes, drives forward all the Air before it: Now this Stream of Air is longer or ſhorter, as the Object is more or leſs diſtant; but the longer or ſhorter that Stream of Air is which protruded by the Image ſtrikes the Eye, ſo much longer or ſhorter the Interval of Space between the Object and the Eye muſt be allowed to be.

the

Iſque ita per noſtras acies perlabitur omnis:
Et quaſi perterget pupillas, atque ita tranſit.
Propterea ſit, uti videamus quàm procul abſit
Res quæque: & quantò plus aëris antè agitatur,
Et noſtros oculos perterget longior aura,
Tam procul eſſe magis res quæque remota videtur:
Scilicet hæc ſummè celeri ratione geruntur,
Quale ſit ut videamus: Et unà quàm procul abſit.
Illud in his rebus minimè mirabile habendum 'ſt,
Cur ea, quæ feriant oculos Simulacra, videri
Singula cùm nequeant, res ipſæ perſpiciantur:
Ventus enim quoque paullatim cùm verberat, & cùm
Acre ferit Frigus, non privam quamque ſolemus
Particulam Venti ſentire, & Frigoris ejus;
Sed magis unverſum: fierique perinde videmus
Corpore tum plagas in noſtro, tanquam aliquæ res
Verberet, atque ſui det ſenſum corporis extra.
Præterea, Lapidem digito cùm tundimus, ipſum
Tangimus extremum Saxi, ſummumque colorem.
Nec ſentimus eum tactu, verùm magis ipſam
Duritiem penitùs Saxi ſentimùs in alto.
Nunc age, cur ultra Speculum videatur Imago
Percipe, nam certè penitus remmota videtur.

the Sight; this Stream of Air then glides to the Eye, and as it were grates gently upon the Ball, and ſo paſſes through. Hence it is that we perceive how far Things are diſtant from our Sight; for the more Air there is that is driven before the Image, and the longer the Stream of it is that rubs upon the Ball, the longer the Interval of Space between the Object and the Eye muſt be allowed to be. All this is done with the utmoſt Celerity; for we ſee what the Object is, and know its Diſtance in the ſame Inſtant.

NOR are we to think it at all ſtrange in this Caſe, that the Objects may be perfectly ſeen, and yet the Images that ſingly ſtrike the Eye cannot themſelves be diſcovered; for when the Wind blows gently upon us, and its ſharp Cold pierces our Bodies, we cannot diſtinguiſh the ſeveral Particles of Wind or Cold that ſo affect us, but we are ſenſible of their whole Strength together; we perceive their Blows laid upon our Bodies, as if ſomething were beating us, and made us feel the Effects of its outward Force upon us. And ſo, when we ſtrike a Stone with our Fingers, we touch the Surface and outmoſt Colour of the Stone; but then we feel nothing of the Colour or Surface by our Touch, we perceive no more than the Hardneſs of the Stone that lies within.

AND now learn why the [m] Image is always ſeen beyond the Glaſs, for it certainly appears at a remote Diſtance from us. For Inſtance: When you

Why the Image appears beyond the Glaſs.

[m] The Eye knows the Diſtance of the Things ſeen by means of the Air that is driven by the Image to the Eye; now when two Airs are driven, the Interval muſt of neceſſity be more extended and ever doubled; but the Image of the Glaſs (for we ſee the Glaſs itſelf, as well as the Thing whoſe Image is reflected) protrades one Air, and the Image reflected another. And this is the Reaſon why the Image appears not to be in the Surface of the Glaſs, but as if it were within and beyond it.

Quod genus illa, foris quæ verè tranſpiciuntur,
Janua cùm per ſe tranſpectum præbet apertum,
Multa facitque foris ex ædibus ut videantur.
Is quoq; enim duplici, geminoq; fit Aëre Viſus.
Primus enim 'ſt, citra poſteis qui cernitur Aër.
Inde fores ipſæ dextra, lævaque ſequuntur.
Poſt extraria lux oculos perterget, & Aër
Alter, & illa, foris quæ verè tranſpiciuntur.
Sic ubi ſe primùm Speculi projecit Imago,
Dum venit ad noſtras acies, protrudit, agitque
Aëra, qui inter ſe cunque 'ſt oculoſque locatus:
Et facit, ut priùs Hunc omnem ſentire queamus,
Quàm Speculum: Sed ubi Speculum quoque ſenſimus ipſum
Continuò à nobis in id hæc, quæ fertur, Imago
Pervenit, & noſtros oculos rejecta reviſit:
Atque alium præ ſe propellens Aëra volvit,
Et facit, ut priùs hunc, quàm ſe, videamus: eoque
Diſtare à Speculo tantùm remmota videtur.
Quare etiam atq; etiam minimè mirarier eſt par
Illis, quæ reddunt Speculorum ex æquore viſum,
Aëribus binis, quoniam res confit utroque.
Nunc ea, quæ nobis membrorum dextera pars eſt,
In Speculis fit ut in læva videatur, eo quòd

Planitiem

you are placed in an inner Room, and Things are ſeen at a Diſtance from you; when the Door is open, and gives you a clear Proſpect, and allows you plainly to diſcover any Object without, your Sight in this caſe is formed, as I may ſay, by a double Air; the Air that lies within the Door is the firſt; then the Door is placed in the Middle between, and then the Light without that rubs gently upon the Eye, this is the other Air; and at length the Object is diſcovered. So, when the Image of the Glaſs firſt flies off, as it makes a Paſſage to our Sight, it ſtrikes forward, and drives on the Air that lies between itſelf and the Eye, ſo that we feel all this interjacent Air before we ſee any thing of the Glaſs; but when we diſcover the Glaſs, the Image that is emitted from us inſtantly flies to it, and being reflected and ſent back, returns again to our Sight, and forces the Air that is before it; which is the Reaſon that we perceive this interjacent Air before the Image is ſeen by us. Now when two Airs are driven (the Image of the Glaſs forcing on one, and the Image reflected another) the Interval muſt of neceſſity be more extended, and even doubled. Hence it is that the Image appears not in the Surface of the Glaſs, but beyond it; and therefore we are not to wonder at all, that the Images of Things are reflected to our Sight, from the Surface of a ſmooth Glaſs, by means of a double Air, becauſe it appears plainly that they are ſo.

Why the Image is tranſpoſed.

BUT more [n]; That Part of the Body that is the Right Side, appears in the Glaſs to be the Left;

[n] Since the Image flows from us, and goes ſtraight forward, it ought as it goes away to ſhew us its hinder Parts, ſo that the Right may anſwer to the Right, and the Left to the Left. He anſwers the Objection by this Example: Take (ſays he) a Maſk made of Clay, not harden'd, but while it is yet

Planitiem ad Speculi veniens cùm offendit Imago,
Non convertitur incolumis; ſed recta retrorſum
Sic eliditur, ut ſiquis priùs arida quàm ſit
Cretea perſona, adlidat pilæve, trabive:
Atque ea continuò rectam ſi fronte figuram
Servet, & eliſam retro ſeſe exprimat ipſa:
Fiet ut, ante oculus fuerit qui dexter, hic idem
Nunc ſit lævus, & è lævo ſit mutua dexter.
Fit quoque de Speculo in Speculum ut tradatur Imago:
Quinque etiam, ſexve ut fieri Simulacra ſuërint.
Nam quæcunq; retro parte interiore latebunt:
Inde tamen, quamvis tortè, penituſque remota,
Omnia per flexos aditus educta licebit
Pluribus hæc Speculis videantur in ædibus eſſe.
Uſque adeo è Speculo in Speculum tràlucet imago,
Et cùm læva data 'ſt, fit rurſum dextera fiat:
Inde retrorſum reddit ſe, & convertit eodem:
Quinetiam, quæcunque latuſcula ſunt Speculorum

Adſimili

Left; becauſe the Image, when it ſtrikes upon the Surface of the Glaſs, is not reflected again unchanged, but is turned a different Way about. For Inſtance: Take a Maſk made of Clay, before it be dry, and daſh it againſt a Pillar or Beam; if it preſerves its Figure intire, and appears inverted only ſo that the Face fills up the Hollow, the Event will be, that the Right Eye will now be the Left, and the Left the Right.

Images from one Glaſs to another.

AND then it may be contrived that the [o] Image ſhall paſs from one Glaſs into another, ſo that five or ſix Images ſhall be reflected at once; and Objects that are placed backwards in the inward Part of the Houſe, let them be ever ſo much out of Sight, and the Turnings ever ſo crooked, they may be all drawn out through the winding Paſſages, and by the placing of many Glaſſes be perfectly diſcovered. The Image may be ſo tranſferred from one Glaſs into another, that it will change its Left into its Right; but when it is again reflected from the ſecond Glaſs into the third, it will reſume its Left Part again, and will continue to change in the ſame manner as it paſſes into all the Glaſſes that follow.

Convex Glaſſes.

BUT in Glaſſes joined together in the [p] Convex

yet moiſt, and daſh it againſt a Beam or Pillar, ſo as to invert it backwards, that the Face may fill up the Hollow; and by this you may imagine, that Images being, as they are, very tenuious Subſtances, may by daſhing againſt the Glaſs be inverted backwards in like manner.

[o] Each Image flies away from the Object, and the Departure of the firſt is ſupplied by the coming of a ſecond, in a perpetual and never-ceaſing Flux; for the Image behind impels the Image before, and thus they run in a ſucceſſive Courſe, and urge on their predeceſſor Images; ſo that the Image which we this Moment ſee in the laſt Glaſs, was but juſt now in the firſt, and a new ſucceeds in the room of that which went laſt away; and thus a perpetual Succeſſion of Images is made from Glaſs to Glaſs.

[p] The Pillar'd Convex is one of the ſort of Glaſſes that reſtores the Image after the uſual manner.

Figure

Adſimili lateris flexura prædita noſtri:
Dextera ea propter nobis Simulacra remittunt,
Aut quia de Speculo in Speculum tranſfertur Imago,
Inde ad nos eliſa bis advolat; aut etiam quòd
Circumagitur, cùm venit Imago, propterea quòd
Flexa ſigura docet Speculi convertier ad nos.
Indugredi porro pariter Simulacra, pedemque
Ponere nobiſcum credas, geſtumque imitari:
Propterea, quia de Speculi qua parte recedas,
Continuò nequeunt illinc Simulacra reverti:
Omnia quandoquidem cogit natura referri,
Ac reſilire ab rebus ad æquos reddita flexus.
Splendida porro oculi fugitant, vitantque tueri:
Sol etiam cæcat, contra ſi tendere pergas,
Propterea, quia vis magna 'ſt ipſius: & altè
Aëra per purum graviter Simulacra feruntur,
Et feriunt oculos turbantia compoſituras.
Præterea, Splendor, quicunque 'ſt acer, adurit
Sæpe oculos, ideo quòd ſemina poſſidet ignis
Multa, dolorem oculis quæ gignunt inſinuando.
Lurida præterea fiunt quæcunque tuentur
Arquati, quia luroris de corpore eorum
Semina multa fluunt Simulacris obvia rerum,
Multaque ſunt oculis in eorum denique miſta,
Quæ contage ſua palloribus omnia pingunt.
E tenebris autem quæ ſunt in luce tuemur,
Propterea, quia cùm proprior caliginis Aër

Ater

Figure of a Pillar, the Side of the Image reflected is returned ſo, that the Right Part of the Image anſwers to the Right of the Object or Thing ſeen; either becauſe the Image, being transferred from one Glaſs into another, is reflected twice; or that the Image, when it comes to us, is turned about; for, that the Face is turned about as it paſſes backwards, we learn from the Figure of the Glaſs.

BESIDES, you would believe that the Image moves with us, and attends all our Steps, and imitates our Geſtures; becauſe, when you retire from any Part of the Glaſs, the Image cannot be reflected from that Part; for Nature ordains, that all Images that are emitted from Bodies, ſhould be returned and reflected by equal Angles.

THE Eyes, you obſerve, fly and avoid a glaring Object; the Sun likewiſe blinds you if you look too intenſely againſt it, becauſe its Force is great, and its Images are diſcharged from above through the pure Air, and ſtrike violently upon the Eyes, and diſturb and looſen their Contexture; beſides, a Brightneſs too powerful for the Sight, often burns the Eye; becauſe it contains many Seeds of Fire, which piercing the Ball, give it ſenſible Pain.

AND then, Whatever a Perſon looks upon that has the Yellow Jaundice, becomes pale and lurid; becauſe many lurid Seeds flow from ſuch a Body, and meet with the Images of Things as they advance. And further, There are many Seeds within the Eyes of One ſo diſtempered, which ſtain all Things with their Infection, and make them look pale.

AGAIN, If we are placed in the Dark, we ſee Objects that are in the Light; [q] becauſe when the dark

[q] When the lucid Air follows the dark, it, by reaſon of its Subtilty, purges and cleanſes the Pores of the Eye, and makes room for the Images to enter; but when the dark Air follows

Ater inît oculos prior, & poſſedit apertos:
Inſequitur candens confeſtim lucidus Aër,
Qui quaſi purgat eos, ac nigras diſcutit umbras
Aëris illius: Nam multis partibus hic eſt
Mobilior, multiſque minutior, & mage pollens.
Qui ſimul atque vias oculorum luce replevit,
Atque patefecit quas ante obſederat ater:
Continnò rerum Simulacra adaperta ſequuntur
Quæ ſita ſunt in luce, laceſſuntque, ut videamus.
Quod contra facere in tenebris à luce nequimus,
Propterea, quia poſterior caliginis Aër
Craſſior inſequitur, qui cuncta foramina complet:
Obſiditque vias oculorum, ne Simulacra
Poſſint ullarum rerum conjecta moveri.
Quadrataſque procul turreis cùm cernimus urbis:
Propterea fit uti videantur ſæpe rotundæ,
Angulus obtuſus quia longè cernitur omnis,
Sive etiam potiùs non cernitur; ac perit ejus
Plaga, nec ad noſtras acies perlabitur ictus:
Aëra per multum quia dum Simulacra feruntur,
Cogit hebeſcere eum crebris offenſibus Aër.
Hinc, ubi ſuffugit ſenſum ſimul angulus omnis,
Fit, quaſi tornata ut ſaxorum ſtructa tuantur:
Non tamen ut coram quæ ſunt, verèque rotunda,
Sed quaſi adumbratim paullum ſimulata videntur.
Umbra videtur item nobis in Sole moveri,
Et veſtigia noſtra ſequi, geſtumque imitari,

dark Air, which is nearer, firſt enters and takes Poſſeſſion of the open Eyes, the bright clear Air immediately follows, which as it were purges the Eye, and diſſipates the Darkneſs the duſky Air had infuſed into it; for this lucid Air is by many Degrees more apt to move, is more ſubtle, and has more Force. This, as ſoon as it has filled the Paſſages of the Eyes with Light, and opened thoſe Pores that the dark Air had ſtopped before, the Images of Things conveyed in the Light immediately follow, and ſtrike upon the Eye, and move the Sight. But if we are placed in the Light, we cannot diſcover Objects in the Dark; becauſe a Train of dark and thicker Air follows the bright, which is neareſt the Eye, and ſtops up all the Pores, and ſo choaks up the Paſſages of the Sight, that the Images of Things cannot be moved or received into it.

FURTHER, When we ſee the ſquare Towers of a City at a Diſtance, they commonly appear round to us; becauſe all Angles, ſeen far off, ſhew obtuſe, or rather they do not ſhew at all: Their Strokes die away, and the Blows never reach our Eyes; for, as the Images are carried through a long Tract of Air, the Air beats upon them continually in their Paſſage, and ſo wears off their Corners. Hence it is that, ſince no manner of Angle ſtrikes the Eye, the ſtony Fabrick appears of a circular Figure; yet that Roundneſs is not ſo diſtinct as if the Object itſelf were really round, and ſeen at a ſmall Diſtance; but it bears a kind of Reſemblance to ſuch a Figure, yet is not completely ſo.

OUR Shadows ſeem to move with us in the Sun, to follow our Steps, and imitate our Geſtures

follows the bright, the Paſſages of the Eye are ſo cloſed and choaked up by that dull and heavy Air, that it becomes incapable to receive the Images of Things that offer themſelves to it.

(Aëra ſi credas privatum lumine poſſe
Indugredi, motus hominum, geſtuſque ſequentem.
Nam nihil eſſe poteſt aliud niſi lumine caſſus
Aër, id, quod nos Umbram perhibere ſuëmus).
Nimirum, quia Terra locis ex ordine certis
Lumine privatur Solis, quacunque meantes
Officimus: repletur item, quod liquimus ejus.
Propterea fit, uti videatur, quæ fuit Umbra
Corporis, è regione eadem nos uſque ſecuta.
Semper enim nova ſe radiorum lumina fundunt,
Primaque diſpereunt, quaſi in ignem Lana trahatur.
Propterea facilè & ſpoliatur lumine Terra:
Et repletur item, nigraſque ſibi abluit Umbras.
Nec tamen hìc Oculos falli concedimus hilum:
Nam, quocunque loco ſit Lux, atque Umbra, tueri
Illorum eſt, eadem verò ſint lumina, necne:
Umbraque, quæ fuit hic, eadem num tranſeat illuc:
An potiùs fiat, paullo quod diximus antè:
Hoc Animi demum Ratio diſcernere debet:
Nec poſſunt Oculi naturam noſcere rerum.
Proinde Animi vitium hoc Oculis adfingere noli.

(if you can ſuppoſe that Air, void of Light, is able to walk, and to follow the Motions and Geſtures of the Body; for what we uſually call *Shadow*, can be nothing but the Air deprived of Light). The Reaſon is, becauſe as we walk we hinder the Rays of the Sun from ſtriking upon a certain Part of the Earth, which by that means becomes dark; but that, as we leave the Place it is covered with Light; and therefore it is that the Shadow of the Body over-againſt it follows us in all our Motions [r]. For a Train of new Rays are continually flowing from the Sun, and the firſt die away like Threads of Wooll drawn through a Flame; and by this means that Part of the Earth is ſoon deprived of Light, and again becomes bright, and diſcharges the black Shade that hung upon it.

[s] But in this caſe we are not in the leaſt to allow that the Eyes are deceived; it is their Buſineſs to diſcover only where the Light and Shade are, but to determine nothing whether the Light be the ſame, or the Shadow be the ſame that moves from one Place to another, or whether it be as we explained above. It is the Office of the Mind and Judgment to diſtinguiſh This; for the Eyes can know nothing of the Nature of Things, and therefore you are not to impute to them the Failures of the Mind.

[r] He teaches us, by an Example, in what manner new Rays are continually flowing from the Sun's Orb, and how they ſupply the Place of the former that vaniſh away, *viz.* as it were like Wooll drawn through a Flame; for then the Wooll that is firſt drawn would be conſumed by the Fire, whilſt other Wooll is in the mean time drawing through it. Thus *Lambinus* explains this Paſſage, but it is ſtill obſcure.

[s] He undertakes to defend the Certainty of the Senſes, which (he ſays) receive the Images of Things juſt as they are brought to them, but all Errors proceed from the Judgment of the Mind; which he attempts to illuſtrate by many Examples.

Qua vehimur Navi, fertur, cùm ſtare videtur :
Quæ manet in ſtatione, ea præter creditur ire :
Et fugere ad puppim colles, campiq; videntur,
Quos agimus præter navim, veliſque volamus.
Sidera ceſſare ætheriis adfixa cavernis
Cuncta videntur : at adſiduo in ſunt omnia motu :
Quandoquidem longos obitus exorta reviſunt,
Cùm permenſa ſuo ſunt cælum corpore claro :
Solque pari ratione manere, & Luna videtur
In ſtatione, ea quæ ferri res indicat ipſa.
Exſtanteſque procul medio de gurgite Montes,
Claſſibus inter quos liber patet exitus, îdem
Apparent, & longè divolſi licet, ingens
Inſula conjectis tamen ex his una videtur.
Atria verſari, & circumcurſare columnæ
Uſque adeo fit uti pueris videantur, ubi ipſi
Deſierunt verti, vix ut jam credere poſſint,
Non ſupra ſeſe ruere omnia tecta minari.
Jamque rubrum tremulis jubar ignibus erigere altè
Cùm cæptat Natura, ſupraque extollere monteis ;
Quos tibi tum ſupra Sol monteis eſſe videtur,
Cominus ipſe ſuo contingens fervidus igni,
Vix abſunt nobis miſſus bis mille ſagittæ ;
Vix etiam curſus quingentos ſæpe veruti :
Inter eos, Solemque jacent immania ponti
Æquora, ſubſtrata ætheriis ingentibus oris :
Interjectaque ſunt terrarum millia multa,
Quæ variæ retinent gentes, & ſæcla ferarum.
At conlectus aquæ digitum non altior unum,
Qui lapides inter ſiſtit per ſtrata viarum,
Deſpectum præbet ſub terras impete tanto,
A terris quantum cæli patet altus hiatus :

Nubila

When we are on Ship-board, the Veſſel drives on when it ſeems to ſtand ſtill, and when it lies at Anchor it ſeems to move; the Hills and Plains ſeem to fly and retire from us as we row, or ſcour with full Sails before the Wind.

And thus all the Stars ſeem fixed in the vaulted Sky, when they are all in continual Motion: They riſe; and when they have meaſured the Heavens with their bright Orbs, they ſet again at an immenſe Diſtance. The Sun and Moon, by the ſame Rule, appear fixed, when Experience tells us that they move.

And Mountains, ſtanding at a Diſtance from one another in the Middle of the Sea, ſo that a Fleet of Ships may ſail eaſily between them, appear like one continued Ridge of Rocks; and though widely ſeparated, yet ſhew like one vaſt Iſland, formed by all of them joined together.

So Boys, when they have made themſelves giddy, ſo ſtrongly fancy that the Walls are turned about, and the Pillars run round, that, even when they ſtand ſtill, they can ſcarce believe but that the whole Houſe threatens to tumble upon their Heads.

Thus, when Nature begins to diſplay the bright Splendor of the Sun with trembling Light, and to raiſe it above the Top of the Mountains, that Hill over which the Sun juſt appears, and glowing ſeems to ſcorch with his Beams, is ſcarce two thouſand Bow-ſhot diſtant from us, perhaps not five hundred Caſts of a Dart; when yet, between that and the Sun lie many mighty Seas, ſpread under a vaſt Expanſion of the Heavens; many thouſand Leagues of Land lie between, poſſeſſed by many Nations, and the whole Race of wild Beaſts.

So a Puddle of Water, no deeper than one of your Fingers, that lies in the Street between the Stones, affords a Proſpect ſo deep under the Earth, as the Diſtance between the Earth and the wide Arch of

Nubila deſpicere, & cœlum ut videare videre, &
Corpora mirando ſub terras abdita cœlo.
Denique, ubi in medio nobis equus acer obhæſit
Flumine, & in rapidas amnis deſpeximus undas;
Stantis equi corpus tranſverſum ferre videtur
Vis, & in adverſum flumen contrudere raptim:
Et, quocunque oculos trajecimus, omnia ferri,
Et fluere adſimili nobis ratione videntur.
Porticus æquali quamvis eſt denique ductu,
Stanſque in perpetuum paribus ſuffulta columnis;
Longa tamen parte ab ſumma cùm tota videtur,
Paullatim trahit anguſti faſtigia coni,
Tecta ſolo jungens, atque omnia dextera lævis:
Donicum in obſcurum coni conduxit acumen.
In pelago nautis ex undis ortus, in undis
Sol fit uti videatur obire, & condere lumen:
Quippe ubi nil aliud niſi aquam, cœlumq; tuentur,
Ne leviter credas labefactari undique ſenſus.
At maris ignaris in portu clauda videntur
Navigia, apluſtris fractis, obnitier undis.
Nam quæcunq; ſupra rorem ſalis edita pars eſt
Remorum, recta 'ſt; & recta ſupernè Guberna:
Quæ demerſa liquore obeunt, refracta videntur
Omnia converti, ſurſumque ſupina reverti:
Et reflexa prope in ſummo fluitare liquore.
Raraque per cœlum cùm venti nubila portant
Tempore nocturno, tum ſplendida Signa videntur.
Labier adverſum nubeis, atque ire ſupernè

Longe

Heaven; ſo that you ſeem to look down upon the Clouds, to take a clear Survey of the Sky; and view with wonder the celeſtial Bodies contained in it, as they ſeem beneath the Earth.

Observe, When your mettled Horſe ſtands ſtill with you in the Middle of a River, and you look down upon the rapid Stream of the Water, the Force of the Current ſeems to drive your Horſe violently upwards, and hurry you ſwiftly againſt the Tide; and on which Side ſoever you caſt your Eyes, all Things ſeem to be borne along, and carried againſt the Torrent in the ſame manner.

A long Portico, though it be of equal Breadth from one End to the other, and reaches far, ſupported by Pillars of an equal Height; yet when you ſtand at one End, to take a View of its whole Extent, it contracts itſelf by degrees to a narrow Point at the further End; the Roof touches the Floor, and both Sides ſeem to meet, till it terminates at laſt in the ſharp Figure of a dark Cone.

The Sun, to Mariners, ſeems to riſe out of the Sea, and there again to ſet and hide his Light; for they ſee nothing but the Water and the Sky; and therefore you are not to conclude raſhly that the Senſes are at all deceived.

To thoſe who know nothing of the Sea, a Ship in the Port ſeems diſabled, and to ſtrive againſt the Waves with broken Oars; for that Part of the Oar and of the Rudder that is above the Water, appears ſtraight; but all below, being refracted, ſeems to be turned upwards, and to be bent towards the Top of the Water, and to float almoſt upon the Surface of it.

So, when the Winds drive the light Clouds along the Sky in the Night, the Moon and Stars ſeem to fly againſt the Clouds, and to be driven above

Longè aliam in partem, quàm quo ratione feruntur.
At ſi fortè oculo manus uni ſubdita ſubter
Preſſit eum, quodam ſenſu fit, uti videantur
Omnia, quæ tuimur, fieri tum bina tuendo;
Bina Lucernarum florentia lumina flammis,
Binaque per totas ædeis geminare Supellex:
Et duplices Hominum facies, & corpora bina.
Denique cùm ſuavi devinxit membra ſopore
Somnus, & in ſumma corpus jacet omne quiete:
Tum vigilare tamen nobis, & membra movere
Noſtra videmur, & in noctis caligine cæca
Cernere cenſemus Solem, lumenque diurnum:
Concluſoque loco Cælum, Mare, Flumina, Monteis
Mutare, & campos pedibus tranſire videmur:
Et ſonitus audire, ſevera ſilentia noctis
Undique cùm conſtent, & reddere dicta tacentes.
Cætera de genere hoc mirando multa videmus,
Quæ violare fidem quaſi ſenſibus omnia quærunt
Nequicquam: quoniam pars horum maxima fallit
Propter opinatus Animi, quos addimus ipſi,
Pro viſis ut ſint, quæ non ſunt ſenſibu' viſa.
Nam nihil egregius, quàm res ſecernere apertas
A dubiis, Animus quas ab ſe protinus addit.
Denique, nil Sciri ſiquis putat, id quoque neſcit,

above them in a Courſe quite oppoſite to that in which they naturally move.

AND if you chance to preſs with your Fingers under one of your Eyes, the Effect will be, that every thing you look upon will appear double, every bright Candle will burn with two Flames, and all the Furniture of the Houſe will multiply and ſhew double; every Face about you, and every Body will look like Two.

LASTLY, When Sleep has bound our Limbs in ſweet Repoſe, and all the Body lies diſſolved in Reſt, we think ourſelves awake; our Members move; and in the gloomy Darkneſs of the Night, we think we ſee the Sun and broad Day-light; and, though confined in Bed, we wander o'er the Heavens, the Sea, Rivers and Hills, and fancy we are walking through the Plains: And Sounds we ſeem to hear; and, though the Tongue be ſtill, we ſeem to ſpeak, when the deep Silence of the Night reigns all about us.

MANY more Things of this kind we obſerve and wonder at, which attempt to overthrow the Certainty of our Senſes, but to no Purpoſe; for Things of this ſort generally deceive us, upon account of the Judgment of the Mind which we apply to them, and ſo we conclude we ſee Things which we really do not; for nothing is more difficult than to diſtinguiſh Things clear and plain from ſuch as are doubtful, to which the Mind is ready to add its Aſſent, as it is inclined to believe every thing imparted by the Senſes.

LASTLY, [t] If any one thinks that he knows nothing, he cannot be ſure that he knows This, when

[t] He falls upon the middle Academicks, of whom *Arceſilas* was Author; who introduced an incoherent kind of Philoſophy, and aſſerted that nothing could be known; for ſomething (as our Poet ſays) muſt be known, otherwiſe it could not be known that nothing can be known.

An Sciri poſſit, qui ſe nil Scire fatetur:
Hunc igitur contra mittam contendere cauſam,
Qui capite ipſe ſuo inſtituit veſtigia retrò.
Et tamen hoc quoque uti concedam, ſcire, at id ipſum
Quæram, (quom in rebus veri nil viderit antè)
Unde ſciat, quid ſit Scire, & Neſcire viciſſim:
Notitiam veri quæ res, falſique creârit;
Et dubium certo quæ res differre probârit?
Invenies primis ab Senſibus eſſe creatam
Notitiam veri, neque Senſus poſſe refelli:
Nam majore fide debet reperirier illud,
Sponte ſua veris quod poſſit vincere falſa.
Quid majore fide porro, quàm ſenſus haberi
Debet? An ab ſenſu falſo Ratio orta valebit
Dicere eos contra, quæ tota ab Senſibus orta'ſt?
Qui niſi ſint veri, Ratio quoque falſa fit omnis.
An poterunt Oculos Aures reprehendere? an Aureis
Tactus? an hunc porro Tactum Sapor arguet oris?
An confutabunt Nares, Oculive revincent?
Non (ut opinor) ita'ſt: Nam ſeorſum quoique poteſtas
Diviſa'ſt: ſua vis quoique'ſt: ideoque neceſſe'ſt,
Quod molle, aut durum eſt, gelidum, fervenſve, ſeorſum
Id molle, aut durum gelidum, fervenſve videri;
Et ſeorſum varios rerum ſentire Colores,

when he confeſſes that he knows nothing at all. I ſhall avoid diſputing with ſuch a Trifler, who perverts all Things, and, like a Tumbler with his Head prone to the Earth, can go no otherwiſe than backwards.

And yet allow that he knows This, I would aſk (ſince he had nothing before to lead him into ſuch a Knowledge) whence he had the Notion, what it was to know, or not to know; what it was that gave him an Idea of Truth or Falſhood, and what taught him to diſtinguiſh between Doubt and Certainty?

But you will find that the Knowledge of Truth is originally derived from the [u] Senſes, nor can the Senſes be contradicted; for whatever is able, by the Evidence of an oppoſite Truth, to convince the Senſes of Falſhood, muſt be ſomething of greater Certainty than They. But what can deſerve greater Credit than the Senſes require from us? Will Reaſon, derived from erring Senſe, claim the Privilege to contradict it? Reaſon, that depends wholly upon the Senſes, which unleſs you allow to be true, all Reaſon muſt be falſe. Can the Ears correct the Eyes? or the Touch the Ears? or will the Taſte confute the Touch? or ſhall the Noſe or Eyes convince the reſt? This, I think, cannot be; for every Senſe has a ſeparate Faculty of its own; each has its diſtinct Powers; and therefore an Object, ſoft or hard, hot or cold, muſt neceſſarily be diſtinguiſhed as ſoft or hard, hot or cold, by one Senſe ſeparately, that is, the Touch. It is the ſole Province of another, the Sight, to perceive the Colours of Things, and the

[u] He attacks the ancient Academicks, who held the Mind to be the ſole Arbiter and Judge of Things, and eſtabliſhes the Senſes to be the ſole Arbitrators; For (ſays he) whatever can correct and confute what is falſe, muſt of neceſſity be the Criterion of Truth; and this is done by the Senſes only.

ſeveral

Et quæcunque coloribu' ſunt conjuncta, neceſſe 'ſt.
Seorſus item Sapor oris habet vim, ſeorſus Odores
Naſcuntur, ſeorſum Sonitus: ideoque neceſſe 'ſt,
Non poſſint alios alii convincere Senſus.
Nec porro poterunt ipſi reprendere ſeſe,
Æqua fides quoniam debebit ſemper haberi.
Proinde, quod in quoque 'ſt his viſum tempore, verum 'ſt.
Et, ſi non poterit ratio diſſolvere cauſam,
Cur ea, quæ fuerint juxtim quadrata, procul ſint
Viſa rotunda; tamen præſtat rationis egentem
Reddere mendoſè cauſas utriuſque figuræ,
Quàm manibus manifeſta ſuis emittere quæquam;
Et violare fidem primam, & convellere tota
Fundamenta, quibus nixatur Vita, Saluſque.
Non modò enim Ratio ruat omnis, Vita quoque ipſa
Concidat extemplo, niſi credere ſenſibus auſis,
Præcipiteiſque locos vitare, & cætera, quæ ſint
In genere hoc fugienda; ſequi, contraria quæ ſint.
Illa tibi eſt igitur verborum copia caſſa
Omnis quæ contra ſenſus inſtructa, parata 'ſt.
Denique ut in Fabrica, ſi prava 'ſt, Regula prima,
Normaque ſi fallax rectis regionibus exit,
Et Libella aliqua ſi ex parti claudicat hilum;
Omnia mendoſè fierî, atque obſtipa neceſſum 'ſt,
Prava, cubantia, prona, ſupina, atque abſona tecta;
Jam ruere ut quædam videantur velle, ruantque,
Prodita judiciis fallacibus omnia primis.
Sic igitur Ratio tibi rerum prava neceſſe 'ſt,
Falſaque ſit, falſis quæcunque ab Senſibus orta 'ſt.
Nunc alii Senſus quo pacto quiſq; ſuam rem
Sentiat, haud quaquam ratio ſcrupoſa relicta 'ſt.

Principio

ſeveral Properties that belong to them. The Taſte has a diſtinct Office. Odours particularly affect the Smell, and Sound the Ears; and therefore it cannot be that one Senſe ſhould correct another, nor can the ſame Senſe correct itſelf, ſince an equal Credit ought to be given to each; and therefore whatever the Senſes at any time diſcover to us, muſt be certain.

AND though Reaſon is not able to aſſign a Cauſe why an Object that is really four-ſquare when near, ſhould appear round when ſeen at a Diſtance; yet, if we cannot explain this Difficulty, it is better to give any Solution, even a falſe one, than to deliver up all Certainty out of our Power, to break in upon our firſt Principle of Belief, and tear up all Foundations upon which our Life and Security depend; for not only all Reaſon muſt be overthrown, but Life itſelf muſt be immediately extinguiſhed, unleſs you give Credit to your Senſes: Theſe direct you to fly from a Precipice and other Evils of this ſort which are to be avoided, and to perſue what tends to your Security. All therefore is no more than an empty Parade of Words, that can be offered againſt the Certainty of Senſe.

LASTLY, As in Building, if the principal Rule of the Artificer be not true, if his Line be not exact, or his Level bear in the leaſt to either Side, every thing muſt needs be wrong and crooked, the whole Fabrick muſt be ill-ſhaped, declining, hanging over, leaning and irregular; ſo that ſome Parts will ſeem ready to fall and tumble down, becauſe the Whole was at firſt diſordered by falſe Principles. So the Reaſon of Things muſt of neceſſity be wrong and falſe, which is founded upon a falſe Repreſentation of the Senſes.

AND now, in what manner each of the other Senſes diſtinguiſhes its proper Object, is a Subject of no great Difficulty to explain.

AND

Principio, auditur Sonus, & Vox omnis, in Aureis
Inſinuata ſuo pepulere ubi corpore ſenſum.
Corpoream quoque enim Vocem conſtare fatendum 'ſt,
Et Sonitum, quoniam poſſunt impellere Senſus.
Præterradit enim Vox fauceis ſæpe, facitque
Aſperiora foras gradiens arteria Clamor.
Quippe, per anguſtum turba majore coorta
Ire foras ubi cœperunt primordia Vocum,
Scilicet expletis quoque janua raditur oris
Rauca viis, & iter lædit qua Vox it in auras.
Haud igitur dubium eſt, quin Voces, Verbaque conſtent
Corporeis è principiis, ut lædere poſſint.

Nec te fallit item, quid corporis auferat, & quid
Detrahat ex Hominum nervis, ac viribus ipſis
Perpetuus Sermo nigraï noctis ad umbram,
Auroræ perductus ab exoriente nitore;
Præſertim ſi cùm ſummo 'ſt clamore profuſus:
Ergo corpoream Vocem conſtare neceſſe 'ſt,
Multa loquens quoniam amittit de corpore partem

Aſperitas autem Vocis fit ab aſperitate
Principiorum, & item lævor lævore creatur.
Nec ſimili penetrant Aureis primordia forma,
Quom Tuba depreſſo graviter ſub murmure mugit,
Aut reboant raucum Retrocita cornua bombum:
Vallibus & Cycni gelidis orti ex Heliconis
Cùm liquidam tollunt lugubri voce querelam.

Haſce igitur penitus Voces cùm corpore noſtro
Exprimimus, rectoque foras emittimus ore,
Mobilis articulat verborum dædala lingua;
Formaturaque labrorum pro parte figurat.

Atque

AND firſt, Sound and all Voices are heard when they enter the Ears, and ſtrike with their Bodies upon the Senſe; for we muſt allow that Sound and Voice are Bodies, becauſe they have Power to make Impreſſion upon the Senſe; for the Voice often ſcrapes the Jaws, and the Noiſe makes the Windpipe rough as it paſſes through. When the Seeds of Words begin to hurry in a Crowd through the narrow Nerves, and to ruſh abroad, thoſe Veſſels being full, the Throat is raked and made hoarſe, and the Voice wounds the Paſſage through which it goes into the Air. There is no Queſtion then but [x] Voice and Words conſiſt of corporeal Principles, becauſe they affect and hurt the Senſe.

YOU are likewiſe to obſerve how much a continual Speaking, from Morning to Night, takes off from the Body; how much it wears away from the very Nerves and Strength of the Speaker, eſpecially if it be delivered in the higheſt Stretch of the Voice. Of neceſſity therefore Voice muſt be a Body, becauſe the Speaker loſes many Parts from himſelf.

THE Roughneſs then of the Voice depends upon the Roughneſs of the Seeds, as the Smoothneſs is produced from ſmooth Seeds; nor are the Seeds of the ſame Figure that ſtrike the Ears when the Trumpet ſounds with grave and murmuring Blaſts, as when the Sackbut rings with its hoarſe Noiſe, or Swans in the cold Vales of *Helicon* ſing out with mournful Notes their ſweet Complaint.

WHEN therefore we preſs out this Voice from the Lungs, and ſend it abroad directly through the open Mouth, the nimble Tongue, with curious Art, faſhions it into Words, and the Motion of the Lips aſſiſts likewiſe in the Formation of them.

[x] Voice without doubt is a Body, becauſe it rakes and ſcrapes the Jaws, makes them rough and hurts them, and therefore muſt of neceſſity touch them; and whatever touches or is touched, is a Body.

Atque ubi non longum ſpatium 'ſt, unde illa profecta
Perveniat vox quæque, neceſſe 'ſt Verba quoque ipſa
Planè exaudiri, diſcernique articulatim.
Servat enim formaturam, ſervatque figuram.
At ſi interpoſitum ſpatium ſit longius æquo,
Aëra per multum confundi Verba neceſſe 'ſt,
Et conturbari Vocem, dum tranſvolat auras.
Ergo fit, Sonitum ut poſſis audire, neque hilum
Internoſcere Verborum ſententia quæ ſit,
Uſque adeo confuſa venit Vox, inque pedita.

Præterea, Edictum ſæpe unum perciet aureis
Omnibus in populo emiſſum præconis ab ore:
In multas igitur Voces Vox una repente
Diffugit, in privas quoniam ſe dividit aureis,
Obſignans formam verbis, clarumque ſonorem.

At quæ pars Vocum non aureis accidit ipſas,
Præterlata perit fruſtra diffuſa per auras:
Pars ſolidis adliſa locis, rejecta ſonorem
Reddit, & interdum fruſtratur imagine Verbi.

Quæ benè cùm videas, rationem reddere poſſis
Tute tibi atque aliis, quo pacto per loca ſola

Saxa

And where the Diſtance is not long from whence any Voice proceeds, the Words muſt of neceſſity be plainly heard and articulately diſtinguiſhed, for in this Caſe the Voice preſerves its proper Frame and Figure; but if the interjacent Space be more than it ſhould be, the Words muſt needs be confuſed by reaſon of the Length of Air, and the Voice be diſordered as it paſſes through. Hence it is that you may hear a Sound only, but diſcover nothing at all of the Meaning of the Words, the Voice comes ſo broken and obſtructed.

Besides, [y] one Sentence delivered from the Mouth of a bawling Cryer, ſtrikes the Ears of all about him; for the one general Voice, that is pronounced inſtantly, breaks inſtantly into innumerable little Voices, and ſo reaches every particular Ear, giving a proper Form and a diſtinct Sound to every Word.

But that Part of the Voice that does not reach the Ear, is diffuſed through the Air to no Purpoſe, but there dies; ſome Parts ſtrike upon ſolid Places, and being reflected return a Sound, and ſometimes diſappoint us with the Eccho or Image of the Word.

If you well conſider This, you will be able to account to yourſelf and others, why, in ſolitary Places, the Rocks regularly return Words the

[y] There is one whole or rather general Voice, which being pronounced from the Mouth, divides itſelf into innumerable other little Voices, which are wholly like one another; thus, when the Voice is uttered by the Speaker, the Formation of the Bodies that burſt out of the Mouth is compreſſed, broken, and as it were ground to Pieces, in ſuch a manner that it divides and goes away into minute Parts or little Voices, altogether alike and of a like Figure, which inſtantly leap abroad, and diffuſe themſelves through the Air or ambient Space, and ſtill preſerve that Likeneſs, till they reach the Ears of all that are within hearing; and thus the ſame Voice is at once heard by many, as all drink of the ſame Water who drink out of the ſame River.

Saxa pareis formas Verborum ex ordine reddant,
Palanteis comites cùm monteis inter opacos
Quærimus, & magna diſperſos voce ciemus.
Sex etiam, aut ſeptem loca vidi reddere Voces
Unam cùm jaceres: Ita colles collibus ipſis
Verba repulſantes iterabant dicta referre.
Hæc loca capripedes Satyros, Nymphaſque tenere
Finitimi fingunt, & Faunos eſſe loquuntur;
Quorum noctivago ſtrepitu, ludoque jocanti
Adfirmant volgò taciturna ſilentia rumpi,
Chordarumque ſonos fieri, dulceiſque querelas,
Tibia quas fundit digitis pulſata canentum:
Et genus Agricolûm latè ſentiſcere, cùm Pan
Pinea ſemiferi capitis velamina quaſſans,
Unco ſæpe labro calamos percurrit bianteis,
Fiſtula ſilveſtrem ne ceſſet fundere muſam.
Cætera de genere hoc monſtra, ac portenta loquuntur,
Ne loca deſerta ab Divis quoque fortè putentur

ſame with thoſe we ſpeak, while we ſeek our Companions wandering o'er the dark Mountains, or call after them aloud when they are diſperſed and loſe their Way. [z] I myſelf have ſeen Places that return ſix Words for one; the Hills ſo reverberate the Words from one another, that they ſeverally repeat them and ſend them back.

THE neighbouring People fondly imagine ſuch Places to be frequented by Goat-footed Satyrs and Nymphs, and tell Stories of the Fawns. They ſay, that the dead Silence of the Night is diſturbed by their late Revels and wanton Sports; that they hear the Sound of Muſick, and the ſoft Notes of the Harp, as the Artiſt touches and ſings to it together; that the Swains all about can diſtinguiſh plainly when [a] *Pan*, ſhaking his Garland of Pine-leaves upon his Head, with long-hung Lip, runs o'er the hollow Reeds, and ſo his Pipe prolongs his rural Song. They ſpeak of many other ſtrange Sights, and monſtrous Fables of the ſame kind; leſt, perhaps, they ſhould be thought to dwell in Places where the *Gods* never come, and therefore

[z] An Eccho is formed by the Reverberation of the vibrated Air, when it meets with a ſmooth and ſolid Body; for the Air, as well as other Mediums, muſt glance and reflect from Objects, if it cannot paſs through them. Thus it changes its firſt Determination, and is variouſly reflected, according to the various Situation of the Object upon which it ſtrikes. The Reaſon why the ſame Sound is ſeveral times reflected, is, becauſe there ſometimes happens to be ſeveral Places diſpoſed among themſelves, in ſuch a manner and at ſuch Diſtances one beyond the other, that the circular Undulations of the Air, in different Places and at different Diſtances, meeting with Bodies ſolid and impenetrable, the ſame Sound will be often rebounded, according to the Number and Site of the Objects; ſo that, after we have received the Sound reflected from the neareſt, we receive it likewiſe returned from thoſe that are more remote from us.

[a] *Pan* was repreſented with a Garland of Pine-leaves on his Head; in one Hand he bears a Pipe, made of ſeven Reeds joined together with Wax, of which he was the firſt Inventor.

Sola tenere: Ideo jactant miracula dictis.
Aut aliqua ratione alia ducuntur, ut omne
Humanum genus eſt avidum nimis auricularum.
Quod ſupereſt, non eſt mirandum, qua ratione
Quæ loca per nequeunt Oculi res cernere apertas,
Hæc loca per Voces veniant, Aureiſque laceſſant.
Conloquimur clauſis foribus: quod ſæpe videmus.
Nimirum, quia Vox per flexa foramina rerum
Incolumis tranſire poteſt, Simulacra renutant;
Perſcinduntur enim, niſi recta foramina tranant:
Qualia ſunt vitri, ſpecies quæ travolat omnis.
Præterea, parteis in cunctas dividitur Vox,
Ex aliis aliæ quoniam gignuntur; ubi una
Diſſiluit ſemel in multas exorta, quaſi ignis
Sæpe ſolet ſcintilla ſuos ſe ſpargere in igneis,
Ergo replentur loca Vocibus, abdita retrò
Omnia quæ circùm fuerint, ſonituque cientur.
At Simulacra viis directis omnia tendunt,
Ut ſunt miſſa ſemel, quapropter cernere nemo
Se ſupra potis eſt; at Voces accipere extra.
Et tamen ipſa quoq; hæc, dum tranſit clauſa viarum,
Vox obtunditur, atque aureis confuſa penetrat:
Et Sonitum potiùs, quàm Verba, audire videmur.
Hæc, queîs ſentimus ſuccum, lingua atque palatum,
Pluſculum habent in ſe rationis, pluſque operaï.

they invent wonderful Tales like theſe; or they are induced by ſome Reaſon or other, as Mankind in general are mighty eager after Prodigies.

In ſhort, it is nothing ſtrange, that thoſe Places through which the Eye can ſee nothing, that through ſuch the Voice can paſs and ſtrike the Ears. We can converſe together in different Rooms, when the Doors are ſhut, as we frequently do, becauſe Voice can pierce ſafely through the crooked Pores of Bodies, which Images cannot, for they are broken if the Paſſages are not ſtraight; ſuch are the Pores of Glaſs through which all ſorts of Images freely find way.

BESIDES, [b] the Voice divides itſelf into ſeveral little Voices, and theſe are broken again into others, as ſoon as the firſt ſingle Voice breaks into many more, like a Spark of Fire that leaps abroad into a Thouſand; ſo that all Places about, even thoſe behind you, are filled with Voice, and are moved by the Sound; but all Images direct their Courſe through ſtraight Paſſages, as ſoon as they are thrown off from Bodies, and therefore no one can ſee any thing over his Head; you hear Words that are ſpoken without, yet even theſe, as they paſs through the Doors that are ſhut, grow weak, and ſtrike the Ears in a confuſed Manner, ſo that we rather ſeem to hear a Sound than to diſtinguiſh the Words.

NOR is the Account of the Tongue and Palate, by which we taſte, a Subject of greater Nicety or more Difficulty to explain.

[b] The Voice divides itſelf and leaps abroad into little Voices, which diffuſe and ſcatter themſelves abroad on all Sides, ſo that they light into the Ears that are all around, and not only thoſe that are placed in a direct Line from the Speaker; but no ſuch Thing can happen to the Images which are broken in paſſing through tortuous Pores and Holes of Bodies. Yet the Voice itſelf, by penetrating through ſuch Mazes and Windings, becomes weak, indiſtinct, and breaks into Murmurs.

Principio, ſuccum ſentimus in ore, cibum cùm
Mandendo exprimimus: ceu plenam ſpongiam aquaï
Si quis fortè manu premere, exſiccareque cœpit;
Inde, quod exprimimus, per caulas omne palati
Diditur, & raræ perplexa foramina linguæ.
Hæc ubi lævia ſunt manantis corpore Succi,
Suaviter attingunt, & ſuavitur omnia tractant
Humida linguaï circum ſudantia templa.
At contrà pungunt ſenſum, lacerantque coorta,
Quantò quæque magis ſunt aſperitate repleta.
Deinde voluptas eſt è ſucco in fine palati,
Cùm verò deorſum per fauceis præcipitavit;
Nulla voluptas eſt, dum diditur omnis in artus:
Nec refert quicquam, quo victu corpus alatur,
Dummodo, quod capias, concoctum didere poſſis
Artubus, & ſtomachi humectum ſervare tenorem.
Nunc aliis alius cur ſit Cibus, ut videamus,
Expediam; quareve, aliis quod triſte, & amarum'ſt,
Hoc tamen eſſe aliis poſſit prædulce videri.
Tantaq; in his rebus diſtantia, differitaſque'ſt,
Ut quod alìs Cibus eſt, aliis fuat acre venenum.
Eſt utique, ut Serpens hominis contacta ſalivis
Diſperit, ac ſeſe mandendo conficit ipſa.

Præterea,

AND firſt, We perceive a Taſte in the Mouth when we ſqueeze the Juice from our Food by chewing, as if we were to preſs a Spunge full of Water in our Hands to make it dry; then the Juice we draw out is ſpread over the Pores of the Palate, and through the crooked Paſſages of the ſpungy Tongue. When the Seeds of this flowing Juice are ſmooth, they gently touch, and affect all the moiſt and ſweating Surface of the Tongue with ſweet Delight; but the Seeds, the more rough and ſharp they are, the more they ſtimulate and tear the Senſe.

AND then the Pleaſure of Taſte we feel no further than the Palate; when the Food is driven down through the Jaws, and divided among the Limbs, the Pleaſure is gone; nor is it of any Concern with what Meat our Bodies are nouriſhed, if you can but digeſt what you eat, and ſeparate it among the Members, and preſerve the moiſt Tenor of the Stomach.

I SHALL now account why, as we find, [c] different Sorts of Food are agreeable to different Palates; or why, what is ſour and bitter to ſome, ſeems to others exceeding ſweet. In theſe Caſes the Variety and Difference are ſo great, that what is Food to one will prove ſharp Poiſon to another; and it happens that a Serpent touched with the Spittle of a Man, expires and bites himſelf to Death.

[c] The Reaſon why the ſame Meat has different Effects upon different Palates, is, becauſe the Organ of the Taſte is different in ſome Men, and in ſome Animals, from what it is in others; either in its Texture or Configuration of the Atoms, or of the Spaces that intervene between them; even as the other Parts of Men or Animals are different, eſpecially the outward. But the different Paſſages or Pores muſt neceſſarily admit and receive different Corpuſcles of Juice; and every thing out of which Juice is ſqueezed, contains Seeds of different Figures; and the Corpuſcles of all Juices, by reaſon of their various Figuration, do not agree with and fit the Organs of all Animals.

BESIDES,

Præterea, nobis Veratrum eſt acre venenum,
At Capris adipes, & Coturnicibus auget.
Ut, quibus id fiat rebus, cognoſcere poſſis,
Principiò meminiſſe decet, quæ diximus ante,
Semina multimodis in rebus miſta teneri.

Porro omnes, quæcunque cibum capiunt Animantes,
Ut ſunt diſſimiles extrinſecùs, & generatim
Extima membrorum circumcæſura coërcet,
Proinde ac Seminibus diſtant variantque figura.
Semina cùm porro diſtent, differre neceſſe 'ſt
Intervalla, Viaſque, Foramina quæ perhibemus,
Omnibus in membris, & in ore, ipſoque palato.
Eſſe minora igitur quædam, majoraque debent,
Eſſe triquetra allis, aliis quadrata neceſſe 'ſt :
Multa rotunda, modis multis multangula quædam.
Namque Figurarum ut ratio, motuſque repoſcunt,
Proinde Foraminibus debent differre figuræ :
Et variare viæ proinde ac textura coërcet.
Ergo ubi quod ſuave 'ſt aliis, aliis fit amarum :
Illis, queis ſuave 'ſt, læviſſima corpora debent
Contrectabiliter caulas intrare palati.
At contrà, quibus eſt eadem res intùs acerba :
Aſpera nimirum penetrant, hamataque fauceis.

Nunc facile ex his eſt rebus cognoſcere quæque.
Quippe, ubi quoi Febris, bili ſuperante, coorta 'ſt,
Aut alia ratione aliqua 'ſt vis excita morbi ;
Perturbatur ibi totum jam Corpus, & omnes
Commutantur ibi poſituræ Principiorum :
Fit, priùs ad ſenſum ut quæ corpora conveniebant,
Nunc non conveniant, & cætera ſint magis apta,
Quæ penetrata queunt ſenſum progignere acerbum.
Utraque enim ſunt in mellis commiſta ſapore,
Id quod jam ſuperà tibi ſæpe oſtendimus antè.

BESIDES, to Us Hellebore is ſtrong Poiſon, but Goats it fattens, and is Nouriſhment to Quails; and to underſtand by what means this comes to paſs, you muſt recollect what we obſerved before, that Seeds of different kinds are mingled in the Compoſition of all Bodies.

AND then, all Animals ſupported by Food, as they differ in outward Shape, and after their ſeveral kinds have a different Form of Body and Limbs, ſo they conſiſt of Seeds of different Figures; and ſince their Seeds differ, the Pores and Paſſages which (as we ſaid) were in all the Parts, and in the Mouth and Palate itſelf, muſt differ likewiſe; ſome muſt be leſs, ſome greater; ſome with three, ſome with four Squares; many round, and ſome with many Corners in various Manners: For as the Frame of the Seeds and their Motions require, the Pores muſt differ in their Figure. The Difference of the Pores depends upon the Texture of the Seeds, and therefore what is ſweet to one is bitter to another: It is ſweet, becauſe the ſmootheſt Seeds gently enter into the Pores of the Palate; but the ſame Food is bitter to another, becauſe the ſharp and hooked Particles pierce the Jaws and wound the Senſe.

NOW, by obſerving this, Things will appear plain; for when a Man has a Fever, either by the overflowing of the Gall, or whether the Violence of the Diſeaſe be raiſed by any other Means, in ſuch a Caſe all the Body is diſturbed, and all the Order and Diſpoſition of the Seeds are changed. And hence it is, that the Juices that were before agreeable to the Senſe, are no longer pleaſing, and thoſe are more fit to enter the Pores that fret and produce a bitter Taſte; for even in Honey there is a Mixture of rough and ſmooth Seeds, as we had frequent Occaſion to mention to you before.

AND

Nunc age, quo pacto Nareis adjectus odoris
Tangat, agam. Primùm res multas eſſe neceſſe 'ſt,
Unde fluens volvat varius ſe fluctus Odorum.
Nam fluere, & mitti volgò, ſpargique putandum'ſt.
Verùm aliis alius magis eſt Animantibus aptus,
Diſſimileis propter formas, ideoque per auras
Mellis Apes quamvis longè ducuntur odore:
Volturiique cadaveribus: tum fiſſa ferarum
Ungula quò tulerit greſſum, promiſſa Canum vis
Ducit: & humanum longè præſentit odorem
Romulidarum arcis ſervator, candidus Anſer.
Sic aliis alius nidor datus ad ſua quemque
Pabula ducit, & à tetro reſilire veneno
Cogit; eoque modo ſervantur ſæcla ferarum.
Hic Odor ipſe igitur, nareis quicunque laceſſit,
Eſt alio ut poſſit permitti longiùs alter.
Sed tamen haud quiſquam tam longè fertur eorum,
Quàm Sonitus, quàm Vox, mitto jam dicere, quàm res,
Quæ feriunt Oculorum acies, viſumque laceſſunt.
Errabundus enim tardè venit, ac perit antè
Paullatim facilis diſtractus in Aëris auras:

AND now ſhall I paſs on, and ſhew in what manner the Approach of Smells affect the Noſe. And firſt, A various Stream of Odours is continually flowing from all Bodies; for you muſt ſuppoſe that Smells are perpetually thrown off, are emitted and diſperſed abroad; but ſome are more peculiar to ſome Animals than others, becauſe they conſiſt of Seeds of different Figures; and therefore the Bee is attracted by the Smell of Honey in the Air afar off, and Vultures by the Stink of Carcaſes; and ſo the natural Quality of the Hound drives him on where the Hoof of the Stag has led the Way, and the white Gooſe (the Saviour of the Capitol) can perceive the Smell of a Man at a great Diſtance.

SO it is the Difference of Smell, peculiar to different Creatures, that directs every Species to its proper Food, and makes it ſtart at the Approach of Poiſon; and by that means the Race of Beaſts is conſtantly preſerved.

[d] BUT this Smell or Odour that affects the Noſe, ſome kinds of it are emitted much further than others, but no one of them is carried ſo far as Sound or Voice (not to ſpeak of thoſe Images that ſtrike the Eye and provoke the Sight) for they wander about and move lazily, and being ſcattered through the Air, die away by Degrees before they have gone far, and for this Reaſon, be-

[d] Odours move more ſlowly through the Air than Sound, are more eaſily diſſipated, and are not diffuſed ſo far, becauſe they flow from the moſt inward Parts of an odorous Body, and the Principles of which they are compoſed are larger than the Principles of Sound, and therefore cannot pierce through the Paſſages that Sound can; and therefore Odour muſt neceſſarily move more ſlow, and be more eaſily diſſipated by the Air it meets in its Paſſage. And this too is the Reaſon why, though we can eaſily judge from what Part a Sound comes to us, we cannot ſo eaſily diſtinguiſh on what Side of us the Body is that diffuſes an Odour.

cauſe

Ex alto primùm quia vix emittitur ex re.
Nam penitùs fluere, atque recedere rebus odores
Significat, quòd fracta magis redolere videntur
Omnia, quòd contrita, quòd igni conlabefacta.
Deinde videre licet majoribus eſſe creatum
Principiis Voci: Quoniam per ſaxea ſepta
Non penetrat, quà Vox volgò, Sonituſque feruntur.
Quare etiam quod olet, non tam facilè eſſe videbis
Inveſtigare, in qua ſit regione locatum.
Refrigeſcit enim cunctando plaga per auras:
Nec calida ad ſenſum decurrit nuntia rerum.
Errant ſæpe Canes itaque, & veſtigia quærunt.
Nec tamen hoc ſolis in Odoribus, atque Saporum
In genere eſt: Sed item Species rerum, atque Colores
Non ita conveniunt ad ſenſus omnibus omnes,
Ut non ſint aliis quædam magis acria viſu.
Quinetiam Gallum, noctem explaudentibus alis
Auroram clara conſuetum voce vocare,
Nenu queunt rapidi contra conſtare Leones,
Inque tueri: Ita continuò meminere fugaï:
Nimirum, quia ſunt Gallorum in corpore quædam
Semina, quæ, cùm ſunt oculis immiſſa Leonum,
Pupillas interfodiunt, acremque dolorem
Præbent, ut nequeant contrà durare feroces;
Cùm tamen hæc noſtras acies nil lædere poſſint:
Aut quia non penetrant, aut quòd penetrantibus illis
Exitus ex Oculis liber datur, in remeando
Lædere ne poſſint ex ulla lumina parte.

cauſe they flow with Difficulty from the moſt inward Parts of Bodies; and that Odours are emitted from the loweſt Profundity of the Subject, is proved from this, that the more they are broken and bruiſed or ſcattered by Fire, the ſtronger they ſmell.

And then we may obſerve, that Smells are formed of larger Seeds than thoſe of Voice; for they cannot pierce through Walls of Stone, where Voice and Sound freely paſs; and therefore we cannot ſo eaſily diſtinguiſh on which Side of us the Body is placed that diffuſes the Smell; for the Stroke grows cold as it moves ſlowly through the Air, nor does the hot Scent briſkly touch the Organ; and therefore Hounds are often at a Fault, and hunt about for the Trail.

And this happens not only in Caſes of Smell and Taſte; but the Images of Things, and all Colours, do not affect the Eyes of all Men alike, but to ſome they are more ſharp and painful to the Senſe than they are to others.

For the [e] Cock, that claps his Wings and drives away the Darkneſs, and by his clear Notes calls forth the Morning Light, the fierceſt Lion dares not ſtand againſt this Creature, nor look him in the Face, but inſtantly prepares for Flight; and for this Reaſon, becauſe there are certain Seeds in the Body of the Cock, that when emitted into the Eyes of the Lion, fret and tear the Balls, and cauſe a very acute Pain, which the Beaſt with all his Courage is not able to bear; and yet theſe Particles are no way hurtful to our Eyes; either they do not pierce them, or if they do, they find a free Paſſage and return eaſily from the Eyes again, ſo that they do not the leaſt Prejudice to the Sight.

[e] The Lion is terrified at the Sight of a Cock; he does not ſay it is the crowing of the Cock that frightens that wild Animal.

And

Nunc age, quæ moveant Animum res, accipe, & unde,
Quæ veniunt, veniant in Mentem, percipe paucis.
Principiò hoc dico, rerum Simulacra vagari
Multa modis multis in cunctas undique parteis
Tenuia, quæ facile inter ſe junguntur in auris,
Obvia cùm veniunt, ut aranea, bracteaque auri.
Quippe etenim multò magis hæc ſunt tenuia textu,
Quàm quæ percipiunt Oculos, viſumque laceſſunt:
Corporis hæc quoniam penetrant per rara, cientque
Tenuem Animi naturam intùs, ſenſumque laceſſunt.
Centauros itaque & Scyllarum membra videmus,
Cerbereaſque canum facies, ſimulacraque eorum,
Quorum morte obita tellus amplectitur oſſa:
Omne genus quoniam paſſim ſimulacra feruntur,
Partim ſponte ſua quæ fiunt Aëre in ipſo:
Partim quæ variis ab rebus cumque recedunt:
Et quæ conſiſtunt ex horum facta figuris.
Nam certè ex vivo Centauri non fit imago:
Nulla fuit quoniam talis natura animalis.
Verum ubi equi atque hominis caſu convênit imago,
Hæreſcit facilè extemplo, quod diximus antè,
Propter ſubtilem naturam, & tenuia texta.
Cætera de genere hoc eâdem ratione creantur.
Quæ cum mobiliter ſumma levitate feruntur,
Ut priùs oſtendi, facilè uno commovet ictu
Quælibet una animum nobis ſubtilis imago.

Tenuis

And now attend, [f] and obſerve in ſhort, what Things affect the Mind, and from whence proceed thoſe Objects that make an Impreſſion upon it. First then, I ſay that ſubtle Images of Things, a numerous Train of them, wander about every Way, and in various Manners. Theſe, as they meet, eaſily twine and are joined together in the Air, as Threads of Gold or the Web of a Spider; for theſe are much finer in their Contexture than thoſe Images that ſtrike the Eye and move the Sight. Theſe pierce through the Pores of the Body, and move the ſubtle Nature of the Mind within, and affect the Senſe. Hence it is that we ſee Centaurs, and the Limbs of Scylla's, and the Heads of Cerberus, and the Shadows of thoſe who have been long ſince dead, and whoſe Bones are rotting in the Grave; becauſe Images of all kinds are ever wandering about; ſome of their own accord are formed in the Air, ſome are continually flying off from various Bodies, and others riſe from theſe Images mixed together: For it is certain, that the Image of a Centaur never flowed from one that was alive; for there never was ſuch an Animal in Nature; but when the Image of a Horſe met by chance with the Image of a Man, it immediately ſtuck to it, which it eaſily does, by reaſon of the Subtilty of its Nature and the Fineneſs of its Texture; and all other monſtrous Figures are formed after the ſame manner. Theſe Images being exceeding light, and eaſily put in Motion (as I obſerved before) each of them affects the Mind at one Stroke;

The Cauſe of Imagination.

Why we think on Monſters.

[f] He now explains what Imagination is, and the Cauſe of it. He ſays, that many moſt ſubtle Images, ſome flowing from Bodies, others formed in the Air of their own accord, and others differently mixed of different Things, are wandering up and down on all Sides in the Air; that theſe Images penetrate into the Mind, and gently moving it, are the Cauſe of Imagination.

Tenuis enim mens eſt, & mirè mobilis ipſa.
Hæc fieri (ut memoro) facilè hinc cognoſcere poſſis,
Quatinus hoc ſimile eſt oculis, quod mente videmus,
Atque oculis ſimili fieri ratione neceſſe'ſt:
Nunc igitur quoniam docui me fortè Leones
Cernere per ſimulacra, oculos quæcunque laceſſunt:
Scire licet mentem ſimili ratione moveri
Per ſimulacra Leonum cætera, quæ videt æquè,
Nec minùs, atque oculi: niſi quòd mage tenuia cernit.
Nec ratione alia, cùm ſomnus membra profudit,
Mens animi vigilat, niſi quòd ſimulacra laceſſunt,
Hæc eadem noſtros animos, quæ, quom vigilamus:
Uſque adeo, certè ut videamur cernere eum, quem
Reddita vitaï jam mors, & terra potita'ſt.
Hoc ideo fieri cogit Natura, quòd omnes
Corporis offecti ſenſus per membra quieſcunt,
Nec poſſunt falſum veris convincere rebus.
Præterea, Meminiſſe jacet, languetque ſopore,
Nec diſſentit, eum mortis, lethique potitum
Jampridem, quem Mens vivum ſe cernere credit.

Quod

for the Mind is of a very ſubtle Nature, and wonderfully diſpoſed to move.

That the Mind is moved, as I obſerved, by the Images of Things, you may eaſily collect from hence, that what we perceive by the Mind is exactly like what we ſee with our Eyes; and therefore they muſt of neceſſity be both affected by the ſame Things, and in the ſame manner. And ſo, when I ſaid, for Inſtance, that I ſee a Lion by means of the Image that ſtrikes upon the Eyes, I know by the ſame Rule that the Mind is moved by another Image of a Lion, which it equally and no leſs ſees, than the Eye ſees the Image proper to it; with this Difference only, that the Mind can perceive Images of a more thin and ſubtle Nature.

Why theſe Fancies ſeem real.

[g] Nor from any other Reaſon is the Mind awake when the Body is aſleep, but becauſe thoſe very Images affect the Mind which were uſed to move the Senſe when we were awake, ſo that we fully believe we ſee a Perſon who has been long ſince dead and buried in the Grave; and it cannot well be otherwiſe, becauſe all the Senſes of the Body are obſtructed and bound up by Sleep, and therefore have no Power to convince us of the contrary. Beſides, the Memory is feeble and languiſhes by Reſt, and makes no Objection to ſatisfy us, that the Man has been long in the Arms of Death, whom the Mind really believes it ſees alive.

[g] The Images that are continually wandering to and fro in all Places, ſtrike with ſuch Violence upon the Sleeper, that they ruſh into his Mind, and ſhake and diſturb it to ſuch a Degree, as begets in it an Imagination of the very Things whoſe Images they are. And the Reaſon why we believe the Dead are actually preſent with us, is, becauſe the Senſes, by which alone we diſtinguiſh between true and falſe, being lulled and ſtupified by Sleep, cannot perform their Functions. Beſides, the Memory is ſtupified, and we do not at that time recollect that the Perſon who ſeems to be preſent with us is dead.

Quod ſupereſt, non eſt mirum, Simulacra moveri,
Brachiaque in numerum jactare, & cætera membra.
Nam fit, ut in ſomnis facere hoc videatur Imago.
Quippe, ubi prima perit, alioque eſt altera nata
Endo ſtatu, prior hæc geſtum mutâſſe videtur.
Scilicet id fieri celeri ratione putandum 'ſt.
Multaque in his rebus quæruntur, multaque nobis
Clarendum 'ſt, planè ſi res exponere avemus.

Quæritur in primis, quare, quod quoique libido
Venerit, extemplo Mens cogitet ejus idipſum.
Anne voluntatem noſtram Simulacra tuentur?
Et ſimulac volumus, nobis occurrit Imago?
Si Mare, ſi Terram cordi 'ſt, ſi denique Cælum,
Conventus hominum, Pompam, Convivia, Pugnas,
Omnia ſub verbone creat Natura, paratque?
Quom præſertim aliis eadem in regione, locoque
Longè diſſimileis Animus res cogitet omnis?

Quid porro, in numerum procedere quom Simulacra
Cernimus in ſomnis, & mollia membra movere,
Mollia mobiliter quom alternis brachia mittunt?
Et repetunt oculis geſtum pede convenienti?
Scilicet arte madent Simulacra & docta vagantur,
Nocturno facere ut poſſint in tempore ludos?

AND then it is no wonder that the Images ſeem to move, and to throw about their Arms and the reſt of their Limbs to exact Time, and thus they ſeem to do when we are in a Dream [h]; for when the firſt Image is gone, and another ſprings up in a different Poſture, the firſt, we think, has changed its Shape; and all this, you muſt conceive, is done in an Inſtant of Time. There are many other Inquiries about Things of this Nature, and we muſt enter into long Diſputes if we attempt to give a diſtinct Anſwer to every one.

Why we think on what we will.

FIRST then, it is aſked, How it is that whatever we deſire to think of, the Mind immediately thinks upon that very Thing? Is it that the Images are always ready at the Command of the Will? Does the Image immediately occur to us the Moment we deſire? If we fancy to think of the Sea, the Earth, the Heavens, of Senates, Shews, Feaſts, Battles; does Nature form theſe, and provide them ready at our Nod? eſpecially ſince the Minds of others, that are in the ſame Country and in the ſame Place with us, think of Things quite different from theſe?

AND then, ſince we ſee Images in our Sleep to ſtep to Time, to move their pliant Limbs, and throw about their tender Arms alternately, and keep due Meaſure with their Feet; are they taught this by Art? Have they learnt to dance, that thus they play their wanton Sports by Night? [i] Is not this

[h] Since we continue ſome time in the ſame Imagination, it is not one Image that is before the Mind all that while, but many Images, that offer themſelves, ſucceſſively, Image after Image in a never-ceaſing Flow. If theſe Images remain in the ſame Poſture, the Thing we fancy we ſee will ſeem without Motion; but if the Poſture of the Images vary, it muſt of neceſſity ſeem to move.

[i] What we take to be one ſingle Moment of Time, is indeed many Moments; ſo that the Images being, as they are, extremely ſubject to Motion, a Multitude of them preſent

 themſelves

An magis illud erit verum, quia tempore in uno
Cùm ſentimus id : ut cùm vox emittitur una :
Tempore multa latent, ratio quæ comperit eſſe :
Propterea fit, uti quovis in tempore quæque
Præſto ſint Simulacra locis in queiſque parata ?
Tanta eſt mobilitas, & eorum copia tanta.
Et quia tenuia ſunt, niſi ſe contendit, acutè
Cernere non potis eſt Animus ; proinde omnia, quæ ſunt
Præterea, pereunt, niſi ſic ſeſe ipſe paravit.
Ipſe parat ſeſe porro, ſperatque futurum,
Ut videat, quod conſequitur rem quamque : fit ergo.
Nonne vides, Oculos etiam, quom, tenuia quæ ſint,
Cernere cœperunt, contendere ſe, atque parare,
Nec ſine eo fieri poſſe, ut cernamus acutè ?
Et tamen in rebus quoque apertis noſcere poſſis,
Si non advertas Animum, proinde eſſe, quaſi omni
Tempore ſemotæ fuerint, longèque remotæ.
Cur igitur mirum eſt, Animus ſi cætera perdit,
Præter quàm quibus eſt in rebus deditus ipſe ?
Deinde adopinamur de ſignis maxima parvis :
Ac nos in fraudem induimus, fruſtramur & ipſi
Fit quoque ut interdum non ſuppeditetur Imago
Ejuſdem generis, ſed Fœmina quæ fuit antè,
In manibus Vir tum factus videatur adeſſe :

this the Truth rather, that what we take for one Moment of Time, this preſent *Now*, has many Parts included, as we find by Reaſon? And therefore it is, that in every Inſtant there are a thouſand different Images always ready in every Place; ſo numerous are they, and ſo apt to move; and then they are ſo exceeding ſubtle, that the Mind cannot poſſibly perceive them diſtinctly, without the niceſt Diligence. And ſo thoſe Images die away unobſerved, which the Mind does not apply itſelf to perceive; but it does apply itſelf cloſely to diſtinguiſh the Image it hopes to find, and therefore ſees it.

Don't you obſerve that the Eyes, when they would diſcover an Object exceeding ſmall, contract themſelves cloſe and provide for it; nor can they accurately diſtinguiſh, except they do ſo? And you will find, even in Things ever ſo plain, unleſs you ſtrictly apply your Mind, they will be as if they were utterly obſcure, and at the greateſt Diſtance undiſcovered. Where is the Wonder then, that the Mind ſhould loſe the Obſervation of all other Images but thoſe it particularly inquires after and is employed about?

Besides, we often miſtake ſmall Objects for great, and ſo we contribute to our own Deluſion and impoſe upon ourſelves.

It happens likewiſe, that ſometimes an Image, of a different kind, preſents itſelf to the Mind. Thus the Form that was before a Woman, now ſhews itſelf a Man, or ſome other Perſon of a

themſelves to us every Moment, and among them the Image of the Thing of which we pleaſe to think. Beſides, though all kinds of Images are continually at Hand, yet they being moſt tenuious and ſubtle, the Mind cannot perceive them, unleſs ſhe watch with great Diligence and endeavour to do ſo; for ſubtle Things will eſcape unheeded by a negligent Mind, as they do from a careleſs and unwatchful Eye.

Aut alia ex alia facies, ætaſque ſequatur :
Quod ne miremur, Sopor, atque Oblivia curant.
Illud in his rebus vitium vehementer, & iſtum
Effugere errorem, vitareque præmeditator,
Lumina non facias Oculorum clara creata,
Proſpicere ut poſſimus : &, ut proferre viaï
Proceros paſſus, ideo faſtigia poſſe
Surarum, ac Feminum pedibus fundata plicari :
Brachia tum porro validis ex apta lacertis
Eſſe, Manuſque datas utraque à parte miniſtras,
Ut facere ad vitam poſſimus, quæ foret uſus.
Cætera de genere hoc inter quæcunque pretantur :
Omnia perverſa præpoſtera ſunt ratione.
Nil adeo quoniam natum 'ſt in Corpore, ut uti
Poſſemus, ſed quod natum 'ſt, id procreat uſum ;
Nec fuit ante Videre Oculorum lumina nata :
Nec dictis Orare priùs, quàm Lingua creata 'ſt :
Sed potiùs longè Linguæ præceſſit origo
Sermonem, multòque creatæ ſunt priùs Aures,
Quàm Sonus eſt auditus : & omni denique membra
Antè fuere (ut opinor) eorum quàm foret uſus.
Haud igitur potuere utendi creſcere cauſa.

different Age and Complexion; but this we are not to wonder at, ſince the Senſes are all aſleep, and we are wholly in a State of Forgetfulneſs.

But in Subjects of this nature, guard yourſelf to the utmoſt of your Power againſt that [k] Error, that groſs Miſtake; and never believe that thoſe bright Orbs, the Eyes, were made that we might ſee; or that our Legs were made upright, and Thighs fixed upon them, and were ſupported by Feet, that we might walk and take large Strides; that our Arms were braced with ſtrong Sinews, and that our Hands hung on both Sides, to aſſiſt us in thoſe Offices that are neceſſary to the Support of Life. And whatever Conſtructions they put upon other Parts of the Body, they are all abſurd and againſt Reaſon; for no Member of the Body was made for any particular Uſe, but after it was made each Member found out a Uſe proper to itſelf; for there was no ſuch Thing as to ſee before the Eyes were made, nor to ſpeak before the Tongue was formed; but the Tongue was rather in Being long before there was Speech, and the Ears were made long before any Sound was heard. In ſhort, all the Members, in my Opinion, were in Being before their particular Uſes were ſet out. This is ſo true that, to engage in

The Limbs not made for proper Uſes.

[k] It was the Opinion of *Epicurus*, that the Members of our Body were not made deſignedly for proper Uſes, but being made by Chance, the Uſe that firſt offered itſelf was laid hold of by each Member; for if any thing was made for a certain future Uſe, ſomething muſt have præ-exiſted, that ſignified that ſuch a Uſe would be convenient or neceſſary. For Example: If there had not been a previous Uſe of Fighting, Sleeping and quenching of Thirſt, Armour, Beds and Cups had never been thought of; thus the Eye could not be made for the ſake of Seeing, *&c.* This Opinion is ridiculous and extravagant; but the Philoſopher was forced to reſort to it, otherwiſe he muſt have allowed of a Providence, which is not more viſible in any thing than in the wonderful Mechaniſm of the Parts of a human Body.

Battle,

At contrà conferre manu certamina pugnæ,
Et lacerare artus, fœdareque membra cruore,
Antè fuit multò, quàm lucida tela volarent.
Et volnus vitare priùs natura coëgit,
Quàm daret objectum parmaï læva per artem.
Scilicet & feſſum corpus mandare quieti,
Multò antiquius eſt, quàm lecti mollia ſtrata.
Et ſedare ſitim priùs eſt, quàm pocula, natum.
Hæc igitur poſſent utendi cognita cauſa
Credier, ex uſu quæ ſunt vitaque reperta.
Illa quidem ſeorſum ſunt omnia, quæ priùs ipſa
Nata, dedere ſuæ poſt notitiam utilitatis.
Quo genere in primis Senſus, & Membra videmus.
Quare etiam atque etiam procul eſt ut credere poſſis,
Utilitatis ob officium potuiſſe creari.
Illud item non eſt mirandum, Corporis ipſa
Quod natura Cibum quærit quoiuſque animantis.
Quippe etenim fluere, atque recedere corpora rebus
Multa modis multis docui, ſed plurima debent
Ex animalibus iis, quæ ſunt exercita motu;
Multaque per ſudorem ex alto preſſa feruntur,
Multa per os exhalantur, quom languida anhelant:
His igitur rebus rareſcit Corpus; & omnis
Subruitur natura, dolor quam conſequitur rem:
Propterea capitur Cibus, ut ſuffulciat artus,
Et recreet vireis interdatus, atque patentem
Per membra ac venas ut amorem obturet edendi.
Humor item diſcedit in omnia quæ loca cunque.
Poſcunt Humorem, glomerataque multa vaporis
Corpora quæ ſtomacho præbent incendia noſtro,
Diſſupat adveniens liquor, ac reſtinguit, ut ignem:

Urere

Battle, to mangle the Limbs, and to ſtain the Body over with Blood, theſe were in Being before any ſhining Darts flew through the Air, and Nature taught us to avoid a Wound before the Left Hand learnt to oppoſe a Shield in our Defence; and ſo, to commit the Body to Reſt was long before the Invention of ſoft Beds, and to quench the Thirſt was practiſed before the Uſe of Cups. All theſe Things, we may believe, were invented for common Benefit, as they were found proper and convenient for the Occaſions of Life. All Things therefore, that were in Being before the Uſe of them was determined, applied themſelves afterwards to the Office that was moſt ſuitable and ſerviceable to them. Of this kind principally, are the Senſes and Members of our Bodies; and therefore you are to avoid, upon all Accounts, ſo much as to think that they were at firſt formed for any particular Deſign or Uſe.

Thirſt and Hunger.

NOR is it wonderful at all, that it is the Nature of every Animal to require Meat; for I have told you that a Train of Effluvia's are ever flowing from all Bodies, in various Manners, but moſt are diſcharged from thoſe Animals that are moſt uſed to Motion; many Particles forced from within are carried off by Sweat, and many exhale through the Mouth, when we are fatigued and pant for Breath. The Body therefore, by theſe Diſcharges, becomes rarefied, and all Nature is falling to Pieces, which is attended with great Pain. Food therefore is taken to prop up the Limbs, and being given from time to time, it renews the Strength, and ſatisfies that gaping Deſire of eating through the Limbs and Veins.

THE cooling Drink likewiſe deſcends into all the Parts that require Moiſture, and the flowing Liquor ſcatters all that Heap of hot Particles that ſet our Stomach in a Flame, and extinguiſhes them as Fire,

Urere ne poſſit calor amplius aridus artus.
Sic igitur tibi anhela ſitis de corpore noſtro
Abluitur, ſic expletur jejuna cupido.
Nunc quî fiat, uti Paſſus proferre queamus,
Cùm volumus, varièque datum ſit membra movere:
Et quæ res tantum hoc oneris protrudere noſtri
Corporis inſuerit, dicam: tu percipe dicta.
Dico Animo noſtro primùm ſimulacra meandi
Accidere, atque Animum pulſare, ut diximus antè.
Inde Voluntas fit: neque enim facere incipit ullam
Rem quiſquam, quam Mens providit, quid velit, antè.
At, quod providet, illius rei conſtat Imago.
Ergo Animus cùm ſeſe ita commovet, ut velit ire,
Inq; gredi, ferit extemplo, quæ in Corpore toto
Per membra, atque artus, Animaï diſſita vis eſt:
Et facile'ſt factu, quoniam conjuncta tenetur.
Inde ea proporro Corpus ferit, atque ita tota
Paullatim moles protruditur, atque movetur.
Præterea, tum rareſcit quoque Corpus, & Aër,
Scilicet ut debet qui ſemper mobilis exſtat,
Per patefacta venit, penetratque foramina largus;
Et diſpergitur ad parteis ita quaſque minutas
Corporis: hinc igitur rebus fit utrinque duabus,

Fire, ſo that the Heat has no longer Power to ſcorch our Bowels; and thus is panting Thirſt waſhed away from our Bodies, thus our craving Hunger is ſatisfied.

[1] AND now attend, and you ſhall know how it is that we are able to walk when we will, that we have a Power to move our Limbs as we pleaſe, and what it is that thruſts the Body forward with all its Weight. *How we move when we pleaſe.*

I SAY then, that the Images of Motion firſt affect and ſtrike the Mind, as we obſerved before. This makes the Will; for we never attempt to do any thing before the Mind knows what it is we deſire to do, and the Image of that Thing which occurs to the Mind muſt be preſent before it. And thus the Mind, having moved itſelf ſo as to reſolve to go forward, ſtrikes immediately upon the Soul, which is diffuſed through the whole Body; and this is eaſily done, becauſe they are both cloſely joined together. The Soul then ſtrikes the Body, and ſo the whole Bulk by degrees is thruſt forward and put into Motion.

BESIDES, the Body by this means is rarefied, and the Air, which is ever diſpoſed to move, enters the open Paſſages, and pierces through the Pores in great Abundance, and ſo is diſperſed through every minute Part of the Body. By theſe Two therefore (by the Soul labouring within, and by the

[1] He now explains the Cauſe of voluntary Motion. Certain Seeds, by which the Will to move may be ſtirred up in the Mind, ſtrike the Mind. This cauſes the Mind to will; and that ſhe may execute what ſhe wills, ſhe rouzes up the Soul, annexed to her and diffuſed through the whole Body; and hence the whole Frame is thruſt forward. But leſt the Soul ſhould be unable to move ſo great a Weight, the Air aſſiſts her from without, and entering into the Pores of the Body, as it is rarefied by Motion, helps to drive on the Burden; and thus, by the Soul labouring within, and by the Air entering from without, the Body is ſhoved forward, as a Ship is driven with Sails and Oars.

Corpus uti, ut Navis velis, ventoque, feratur.
Nec tamen illud in his rebus mirabile conſtat,
Tantula quòd tantum Corpus Corpuſcula poſſint
Contorquere, & onus totum convertere noſtrum.
Quippe etenim Ventus ſubtili corpore tenuis
Trudit agens magnam magno molimine Navim :
Et manus una regit quantovis impete euntem :
Atque Gubernaclum contorquet quolibet unum.
Multaque per trochleas, & tympana pondere magno
Commovet, atque levi ſuſtollit Machina niſu.
Nunc quibus ille modis Somnus per membra quietem
Inriget, atque Animi curas è pectore ſolvat :
Suavidicis potiùs, quàm multis verſibus, edam,
Parvus ut eſt Cycni melior canor, ille Gruum quàm
Clamor, in ætheriis diſperſus nubibus Auſtri.
Tu mihi da tenueis aureis, animumque ſagacem,
Ne fieri negites, que dicam poſſe ; retroque
Vera repulſanti diſcedas pectore dicta :
Tutemet in culpa quom ſis ne cernere poſſis.
Principiò Somnus fit, ubi eſt diſtracta per artus
Vis Animæ, partimque foras ejecta receſſit :
Et partim contruſa magis conceſſit in altum.
Diſſolvuntur enim tum demum Membra, fluuntque.
Nam dubium non eſt, Animaï quin opera ſit

Senſus

the Air entering from without) the Body is moved, as a Ship is by Oars and Wind.

NOR is this at all ſtrange, that Particles ſo very ſmall ſhould turn about the Bulk of our Bodies, and move ſo great a Weight; for the driving Wind, formed of ſo fine and ſubtle Seeds, thruſts forward a large Ship with mighty Force, and one Hand can govern it under full Sail, by turning one little Helm, which Way it pleaſes; and an Engine with ſmall Labour is able, by Pullies and Wheels, to move many Bodies of a great Weight.

NEXT, how ſoft Sleep diſſolves the Limbs in Reſt, and frees the Mind from anxious Care, I chooſe in few but ſweeteſt Numbers to explain; as the Swan's ſhort Song is more melodious than the harſh Noiſe of Cranes ſcatter'd by Winds through all the Air. Hear me, my *Memmius*, with attentive Ears and a diſcerning Mind, leſt what I ſhall prove, you think impoſſible to be; and ſo your Mind refuſing to admit the Truth I ſhall relate, you make no Progreſs in Philoſophy, when the Fault is in yourſelf, that you will not ſee. *Sleep.*

AND firſt, [m] Sleep comes on when the Power of the Soul, diffuſed through the Limbs, Part of it is thrown out and fled abroad, and Part being ſqueezed more cloſe retires further within; then are the Limbs diſſolved and grow weak. For without doubt the Buſineſs of the Soul is to ſtir up

[m] He ſays our Senſes are locked up and hindered by Sleep from performing their Functions; but our Senſes proceed from the Operation of the Soul; therefore it follows, that when the Animal is aſleep his Soul muſt partly be gone out of him, partly be retired into the inmoſt Receſſes of his Body, and partly be diſperſed through the Members. He will not allow that when the Animal ſleeps the Soul is intirely retreated from the whole Body, for then neither the Creature nor his Senſes could revive after Sleep; for as Fire buried in Aſhes is not wholly extinguiſhed, ſo neither is the Soul extinct in an Animal aſleep.

Senſus hic in nobis, quem cùm Sopor impedit eſſe,
Tum nobis Animam perturbatam eſſe putandum'ſt,
Ejectamque foras, non omnem; namque jaceret
Æterno Corpus perfuſum frigore lethi:
Quippe ubi nulla latens Animaï pars remaneret
In membris, cinere ut multa latet obrutus Ignis,
Unde reconflari Senſus per membra repente
Poſſit ut ex igni cæco conſurgere Flamma.
Sed quibus hæc rebus novitas confletur & unde
Perturbari Anima, & Corpus langueſcere poſſit,
Expediam: tu fac ne ventis verba profundam.
Principiò, externa Corpus de parte neceſſum'ſt,
Aëriis quoniam vicinum tangitur auris,
Tundier, atque ejus crebro pulſarier ictu.
Proptereaque fere res omnes, aut Corio ſunt,
Aut Seta, aut Conchis, aut Callo, aut Cortice tectæ.
Interiorem etiam partem ſpirantibus Aër
Verberat hic idem cùm ducitur, atque reflatur.
Quare utrinque ſecùs quom Corpus vapulet, & quom
Perveniant plagæ per parva foramina nobis
Corporis ad primas parteis, elementaque prima;
Fit quaſi paullatim nobis per membra ruina.
Conturbantur enim poſituræ principiorum
Corporis, atque Animi, ſic, ut pars inde Animaï
Ejiciatur & introrſum pars abdita cedat;

Pars

Senſe in us, which ſince Sleep removes, we muſt conclude that the Soul then is diſturbed and driven abroad: Not the whole Soul; for then the Body would lie in the cold Arms of eternal Death; then no Part of the Soul would lie retired within the Limbs, as a Fire remains covered under a Heap of Aſhes; from whence the Senſes might be kindled again through the Body, as a Flame is ſoon raiſed from hidden Fire.

But by what means this wonderful Change is brought about, how the Soul is thus diſordered and the Body languiſhes, I ſhall now explain. Do you ſee that I do not ſcatter my Words into the Wind.

And firſt, [n] The outward Surface of Bodies which are always touched by the adjacent Air, muſt of neceſſity be ſtruck by it and beaten with frequent Blows; and for this Reaſon all Things almoſt are covered either with Skin, or Briſtles, or Shells, or Buff, or Bark. This Air then, as it is drawn in and breathed out by Reſpiration, ſtrikes upon the inward Parts of the Body. Since therefore the Body is beat upon from within and without, and ſince the Strokes pierce through the little Pores into the Seeds and firſt Principles of it, this cauſes a kind of Ruin and Deſtruction through all the Limbs; the Situation of the Seeds, both of the Body and Mind, are diſordered; ſo that part of the Soul is forced out, and part retires

[n] The outward Air beats upon the outmoſt Parts of the Body, and the Air that is breathed in ſtrikes the inward Parts; theſe two-fold Strokes diſturb the Order and Site of the Atoms, and cauſe a following Weakneſs in the Soul and Body; part of the Soul is forced out, part retreats inwardly, and part is diſperſed through the Limbs; ſo the Parts thus diſjoined cannot perform their ordinary Functions. The Motions therefore of Senſe being changed, the Senſe too goes away; and thus what was the Support of the Body being abſent, the Body muſt neceſſarily flag and fail.

Pars etiam diſtracta per artus, non queat eſſe
Conjuncta inter ſe, nec motu mutua fungi:
Inter enim ſepit aditus Natura, viaſque.
Ergo Senſus abit mutatis motibus altè.
Et quoniam non eſt quaſi quod ſuffulciat artus,
Debile fit Corpus, langueſcunt omnia membra:
Brachia, Palpebræque cadunt, Popliteſque procumbunt.

Deinde cibum ſequitur Somnus, quia quæ facit Aër,
Hæc eadem Cibus, in venas dum diditur omneis,
Efficit: & multò Sopor ille graviſſimus exſtat,
Quem ſatur, aut laſſus capias, quia plurima tum ſe
Corpora conturbant magno contuſa labore.
Fit ratione eadem conjectus porro Animaï
Altior, atque foras ejectus largior ejus,
Et diviſior inter ſe, ac diſtractior intus.

Et quoi quiſque fere ſtudio devinctus adhæret,
Aut quibus in rebus multùm ſumus antè morati,
Atque in qua ratione fuit contenta magis Mens,
In Somnis eadem plerumque videmur obire:
Cauſidici cauſas agere, & componere leges:
Induperatores pugnare, ac prælia obire:
Nautæ contractum cum ventis cernere bellum:

and lurks cloſe within; and the Part that is diffuſed through the Limbs is ſo broken and divided, that the Seeds cannot unite to perform their mutual Operations; for Nature ſtops up all Paſſages of Communication between them, and therefore the regular Motions being exceedingly changed, the Senſe is intirely gone. Since therefore there is not Power ſufficient to ſupport the Limbs, the Body becomes weak; all the Members languiſh; the Arms, the Eyelids fall; and the Knees ſink under the Weight of the Body.

Thus Sleep follows when the Belly is full, becauſe Food, when it is diſtributed through all the Veins, has the ſame Effect upon the Soul as the Air had; and that Sleep is by much the ſoundeſt which you take when you are weary or full, becauſe then more of the Seeds being agitated and put into Motion by the hard Labour, mutually diſturb and diſorder one another. And for this Reaſon the Soul retires further within, and a greater Part of it is thrown out, and the Parts that remain within are the more ſeparated and the further disjoined.

[o] And then the Buſineſs we more particularly follow, the Affairs we are chiefly employed in, and what our Mind is principally delighted with when we are awake, the ſame we are commonly converſant about when we are aſleep. The Lawyer is pleading of Cauſes and making of Statutes, the Soldier is fighting and engaging in Battles, the Sailor is warring againſt the Winds; for myſelf, *Dreams.*

[o] It was the Opinion of *Epicurus*, that the Minds of ſleeping Animals are ſtruck and moved by outward and adventitious Images, and that theſe are the Cauſes of Dreams. And we uſually dream about what we have been chiefly employed in the Day, becauſe the Paſſages, through which the Images had ſo often entered, are not cloſed up, and therefore more eaſily receive and admit the Images that belong to the Actions in which we have been employed.

Nos agere hoc autem, & Naturam quærere rerum
Semper, & inventam patriis exponere chartis.
Cætera ſic ſtudia, atque artes plerumque videntur
In Somnis animos Hominum fruſtrata tenere.
Et, quicunque dies multos ex ordine ludis
Adſiduas dederunt operas, plerumque videmus,
Quom jam deſtiterint ea Senſibus uſurpare,
Reliqüas tamen eſſe vias in Mente patenteis,
Qua poſſint eadem rerum Simulacra venire.
Permultos itaque illa dies eadem obverſantur
Ante oculos, etiam vigilantes ut videantur
Cernere ſaltanteis, & mollia membra moventeis:
Et citharæ liquidum carmen, chordaſque loquenteis
Auribus accipere, & conſeſſum cernere eundem,
Scenaïque ſimul varios ſplendere decores.
Uſque adeo magni refert ſtudium, atque voluntas,
Et quibus in rebus conſuerint eſſe operati
Non Homines ſolùm, ſed verò Animalia cuncta.
Quippe videbis Equos forteis, cùm membra jacebunt,
In Somnis ſudare tamen, ſpirareque ſæpe,
Et quaſi de palma ſummas contendere vireis,
'Tunc quaſi Carceribus patefactis ſæpe quiete:
Venantumque Canes in molli ſæpe quiete
Jactant crura tamen ſubitò, voceſque repente
Mittunt, & crebras redducunt naribus auras,
Ut veſtigia ſi teneant inventa ferarum.
Expergefactique ſequuntur inania ſæpe
Cervorum ſimulacra, fugæ quaſi dedita cernant;
Donec diſcuſſis redeant erroribus ad ſe:
At conſueta domi Catulorum blanda propago
Degere, ſæpe levem ex oculis, volucremque ſaporem
Diſcutere, & corpus de terra conripere inſtant,
Proinde quaſi ignotas facies, atque ora tuantur.

Et

ſelf, I am always ſearching into the Nature of Things, and writing my Diſcoveries in *Latin* Verſe; and ſo, many other Arts and Employments are commonly the empty Entertainments of the Minds of Men when they are aſleep.

And they who ſpend their Time in ſeeing of Plays for many Days together, when thoſe Repreſentations are no longer preſent to the waking Senſes, there ſtill remain ſome open Traces left in the Mind, through which the Images of thoſe Things find a Paſſage, ſo that for many Days after the whole Performance is acting over again before their Eyes; and even while they are awake they fancy they ſee the Dancers leaping, and moving their active Limbs; they are raviſhed with the ſoft Notes of the Muſick, and hear the ſpeaking Strings; they ſee the ſame Audience, the ſame Variety of the Scenes and Decorations of the Stage. So ſtrong Impreſſions do Uſe and Cuſtom make upon us; ſuch Effects do the common Buſineſs of Life produce in the Minds of Men, and in Beaſts likewiſe.

The Dreams of Beaſts.

For you ſhall ſee the gallant Courſer, when his Limbs are at reſt, to ſweat in his Sleep, to breathe ſhort, and, the Barriers down, to lay himſelf out as it were on the full Stretch for the Prize.

And Hounds frequently in their ſoft Sleep throw out their Legs, and of a ſudden yelp and ſnuff the Air quick with their Noſe, as if they were full Cry upon the Foot of the Deer; and when awake they ſtill perſue the empty Image of the Game, as if they ſaw it run ſwiftly before them, till undeceived they quit the Chace, and the fancied Image vaniſhes away.

And the fawning Breed of Houſe-Dogs, that live at home, often rouze and ſhake the drowſy Fit from their Eyes, and ſtart up of a ſudden with their Bodies, as if they ſaw a Stranger or a Face they had not been uſed to.

Et quàm quæque magis ſunt aſpera ſemina eorum,
Tam magis in Somnis eadem ſævire neceſſum'ſt.
At variæ fugiunt Volucres, penniſque repente
Sollicitant Divûm nocturno tempore lucos,
Accipitres ſomno in leni ſi prælia, pugnaſque
Edere ſunt perſectantes, viſæque volantes.
Porro Hominum mentes magnis quæ motibus edunt?
Magna etenim ſæpe in Somnis faciuntque, geruntque.
Reges expugnant, capiuntur, prælia miſcent;
Tollunt clamores, quaſi ſi jugulentur ibidem:
Multi depugnant, gemituſque doloribus edunt;
Et quaſi pantheræ morſu ſævique leonis
Mandantur, magnis clamoribus omnia complent.
Multi de magnis per Somnum rebu' loquuntur,
Indicioque ſui facti perſæpe fuere:
Multi mortem obeunt, multi de montibus altis
Se quaſi præcipitent ad terram corpore toto
Exterrentur, & ex Somno, quaſi mentibu' capti,
Vix ad ſe redeunt permoti corporis æſtu.
Flumen item ſitiens, aut fontem propter amœnum
Adſidet, & totum prope faucibus occupat amnem.
Puſi ſæpe lacum propter, ſe, ac dolia curta,
Somno devincti credunt extollere veſtem,
Totius humorem ſaccatum ut corpori' fundant:
Cùm Babylonica magnifico ſplendore rigantur.
Tum, quibus ætatis freta primitus inſinuantur,
Semen ubi ipſa dies membris matura creavit;

Conveniunt

THE ſharper the Seeds are of which the Images are formed, they ſtrike in the Sleep with the greater Violence; ſo, many Birds will fly about, and hide themſelves in the inmoſt Receſſes of ſacred Groves by Night, if in their ſoft Sleep they ſee the Hawk perſuing them upon the Wing, or pouncing or engaging with his Prey. *Frightful Dreams.*

AND then, what mighty Deeds are Men hurrying themſelves about in their Dreams? Then they ſhew their Valour, and do wonderful Exploits; they engage with Kings, are taken Captive, are in the Confuſion of the Battle; they cry out as if they were expiring upon the Spot. Some are in the hotteſt of the Fight, and groan with the Anguiſh of their Wounds, and fill the Air with Complaints, as if they were torn by the Teeth of a Panther or fierce Lion. Some in their Sleep talk of Myſteries of State, and frequently diſcover the Treaſon of their own contriving. [p] Some think they are dying away; and others, falling from dreadful Precipices with all their Weight upon the Earth, are terrified, and awake almoſt out of their Senſes, and can ſcarce recover themſelves from the Hurry and Diſtraction of their Spirits. Another, parched up with Thirſt, ſits on the River's Bank, or by the Side of a pleaſant Fountain, and almoſt drinks down his Throat the whole Stream: And Children in their Sleep often fancy they are near ſome Sink or publick Piſſing place; they think they are taking up their Clothes, that they may make Water freely, and ſo the *Babylonian* Coverlid with its purple Dye, and the rich Bedding, are wet through.

AND further, Thoſe who are in the Heat of Youth, whoſe ripening Age has well digeſted the Semen through all the Limbs, on ſuch the Images *The Cauſe of Love.*

[p] It is no wonder that ſome Dreams fright us more than others, becauſe thoſe whoſe Images are compoſed of rough Seeds, that rudely grate and wound the Mind on which they ſtrike, muſt of neceſſity be the moſt frightful.

Conveniunt Simulacra foris è corpore quoque,
Nuntia præclari voltus, pulchrique coloris:
Qui ciet inritans loca turgida ſemine multo,
Ut, quaſi tranſactis ſæpe omnibu' rebu' profundant
Fluminis ingenteis fluctus, veſtemque cruentent.
Sollicitatur id in nobis, quòd diximus antè,
Semen; adulta ætas cùm primùm roborat artus.
Namque alias aliud res commovet, atque laceſſit:
Ex homine humanum Semen ciet una Hominis vis.
Quod ſimulatque ſuis ejectum ſedibus exit,
Per membra, atque artus decedit corpore toto
In loca conveniens nervorum certa; cietque
Continuò parteis genitaleis corporis ipſas:
Inritata tument loca Semine, fitque voluntas
Ejicere id, quò ſe contendit dira libido;
Idque petit corpus mens, unde'ſt ſaucia amore;
'Namque omnes plerumque cadunt in volnus, & illam
'Emicat in partem ſanguis, unde icimur ictu,
'Et ſi comminus eſt, hoſtem ruber occupat humor.
Sic igitur, Veneris qui telis accipit ictum,
Sive Puer membris muliebribus hunc jaculatur,
Seu Mulier toto jactans è corpore amorem,
Unde feritur, eo tendit, geſtitque coire,
Et jacere humorem in corpus de corpore ductum:
Namque voluptatem præſagit multa cupido.
Hæc Venus eſt nobis, hinc autem'ſt nomen Amoris;
Hinc illæ primum Veneris dulcedinis in cor
Stillavit gutta, & ſucceſſit fervida cura.
Nam ſi abeſt quod ames, præſto Simulacra tamen ſunt
Illius, & nomen dulce obverſatur ad aureis.

Sed

of every beauteous Object ſtrike deeply, and ſhew the lovely Face and bluſhing Cheek; which ſo provoke and ſtimulate the Parts, ſwelling with Seed in abundance, that they diſcharge, as if the Deed were done, large Floods of Moiſture, and pollute the Robe.

For (as I ſaid before) the Seed begins to boil as ſoon as mature Age has well-braced the Limbs. Other Things are moved and provoked by other Impreſſions, but nothing but the Power of Beauty can put the human Semen into Motion, which, as ſoon as it is ejected from its little Cells, flows through the Limbs and through every Part of the Body, and being received into the Receptacle of the Nerves proper for it, in an inſtant ſtimulates the Genitals. Theſe Parts grow turgid with the Semen, and thence proceeds the Will to project it where the Heat of Luſt ſtrives to reach; for the Mind drives furiouſly towards the lovelyBody from whence it received the Wound of Love. Men generally fall upon their Wound, and the Blood guſhes with Violence towards the Part from whence we received the Blow. If the Murderer be near, the red Liquor will ſpout all over him. So he that is ſtruck with the Darts of *Venus* (whether ſome beauteous Boy, with Female Charms, the Arrow caſts; or ſome more beauteous Maid, that ſhoots out Love from every Pore) tends to the Part that gave the Stroke; he is in Raptures to enjoy, to inject and to conſummate; for the hot Deſire to the Act foreſhews the mighty Pleaſure that attends it. This is properly *Venus* to us; this is the Deity of Love. Hence the Drops of ſweet Delight firſt ſtrike upon the Heart, and the burning Fever of ſucceeding Care follows it cloſe; for if the Object of your Love be abſent, her charming Image is always before you, and her ſweet Name is ever thrilling in your Ears.

But

Sed fugitare decet Simulacra, & pabula amoris
Abſterrere ſibi, atque aliò convertere mentem:
Et jacere humorem conlectum in corpora quæque:
Nec retinere ſemel converſum unius amore:
Et ſervare ſibi curam, certumque dolorem.
Ulcus enim viveſcit, & inveteraſcit alendo,
Inque dies gliſcit furor, atque ærumna graveſcit,
Si non prima novis conturbes volnera plagis,
Volgivagaque vagus Venere ante recentia cures,
Aut aliò poſſis Animi traducere motus.
Nec Veneris fructu caret is, qui vitat amorem:
Sed potius, quæ ſunt ſine pæna, commoda ſumit.
Nam certa, & pura eſt ſanis magis inde voluptas,
Quàm miſeris, etenim potiundi tempore in ipſo
Fluctuat incertis erroribus ardor Amantum:
Nec conſtat quid primum oculis, manibuſque fruantur.
Quod petiere premunt arctè, faciuntque dolorem
Corporis, & denteis inlidunt ſæpe labellis,
Oſculaque adfigunt, quia non eſt pura voluptas:
Et ſtimuli ſubſunt, qui inſtigant lædere idipſum,
Quodcunque eſt, rabies unde illæ germina ſurgunt.
Sed leviter pœnas frangit Venus inter Amorem,
Blandaque refrænat morſus admiſta voluptas.
Namq; in eo ſpes eſt, unde'ſt ardoris origo,
Reſtringui quoque poſſe ab eodem corpore flammam;
Quod fieri contra coram natura repugnat:
Unaque res hæc eſt, quoius quàm pluria habemus,
Tam magis ardeſcit dira cuppedine pectus.
Nam Cibus, atque Humor membris adſumitur intus,
Quæ quoniam certas poſſunt obſidere parteis,

But take care that you fly thoſe Images, and avoid thoſe Incentives to Love, and divert your Mind ſome other way; chooſe to beſtow your Favours in common; don't reſerve your whole Stock for One only, leſt by that means you entail Anxiety and certain Sorrow upon yourſelf; for the Ulcer ſpreads and grows ſtubborn by feeding it, the Madneſs increaſes every Day, and the Trouble becomes the heavier, unleſs you cure old Wounds by new, or, like a Rover, remove your firſt Smart by wandering over all the Sex, or turn the Paſſion of your Mind into ſome other Channel. *A Caution againſt Love.*

Nor is He without the Pleaſures of *Venus*, who diſdains the Fetters of Love, but rather takes the Sweet without the Pain that follows it; for ſuch a ſober Lover taſtes more certain and more unmixed Delight, than thoſe Wretches, thoſe furious Votaries, whoſe Mind in the very inſtant of Enjoyment is toſſed with a thouſand Doubts and Fears. Theſe know not what Sweets they ſhall firſt rifle with their Hands and Eyes; what they faſten upon, they ſtrain hard and give Pain to the Body; they often fix their Teeth in the Fair-one's Lips, and pin her down with Kiſſes: And for this Reaſon, becauſe the Joy is imperfect, and ſome Stings remain which provoke them to hurt the Thing, whatever it is, that firſt put them into a Rage; but *Venus* in the Encounter of Love gently ſooths the Pain, and the ſweet Pleaſure intermixed reſtrains the Lover's Teeth from biting too hard.

The Lover hopes, perhaps, that his Flame may be extinguiſhed by the ſame Object that firſt blew the Fire, but Experience ſhews the contrary of This; for This is the only Thing which, the more we enjoy of it, our Soul ſtill burns with the eager Deſire of more. Meat and Drink are taken down into the Body, and becauſe they fill up certain empty Places, therefore the Appetite of Eat-

ing

Hoc facilè expletur laticum, frugumque cupido;
Ex hominis verò facie, pulchroque colore,
Nil datur in corpus præter Simulacra fruendum
Tenuia, quæ vento ſpes raptat ſæpe miſella.
Ut bibere in ſomnis Sitiens quom quærit, & humor
Non datur, ardorem in membris qui ſtinguere poſſit:
Sed laticum Simulacra petit, fruſtraque laborat:
In medioque ſitit torrenti flumine potans.
Sic in amore Venus Simulacris ludit Amanteis,
Nec ſatiare queunt ſpectando corpora coram:
Nec manibus quidquam teneris abradere membris
Poſſunt, errantes incerti corpore toto.
Denique quom membris conlatis flore fruuntur
Ætatis, quom jam præſagit gaudia corpus,
Atque in eo eſt Venus, ut muliebria conſerat arva;
Adfigunt avidè corpus, junguntque ſalivas
Oris, & inſpirant preſſantes dentibus ora,
Nequicquam: Quoniam nihil inde abradere poſſunt,
Nec penetrare, & abire in corpus corpore toto.
Nam facere interdum id velle, & certare videntur:
Uſqueadeo cupidè Veneris compagibus hærent,
Membra voluptatis dum vi labefacta liqueſcunt.
Tandem ubi ſe rupit nervis conlecta cupido,
Parva fit ardoris violenti pauſa parumper;
Inde redit rabies eadem, & furor ille reviſit,
Quom ſibi quod cupiant ipſi, contingere quærunt:
Nec reperire malum id poſſunt quæ machina vincat:
Uſque adeo incerti tabeſcunt volnere cæco.
Adde quòd abſumunt vireis, pereuntque labore.

ing and Drinking is eaſily ſatisfied; but from a lovely Face and a fine Complexion, the Body can enjoy nothing but empty Images, and a fleeting Hope ſcattered by every Wind. As a thirſty Man deſires to drink in his Sleep, and has no Moiſture to allay the Heat within, but vainly catches at the Images of Rivers, and labours to no Purpoſe, and is parched up while he fancies himſelf quaffing in a full Stream; ſo in the Buſineſs of Love, *Venus* deludes the Lover with empty Images, nor can he quench his Deſire by gazing upon the charming Object, nor bring away any thing from the tender Limbs with his Hands, as he wanders with wild Exceſs over all the Body of his Miſtreſs.

Besides, when they ſport in the Flower of their Age with their Limbs mingled in the Embrace, when their Bodies feel the coming Joy, and *Venus* is fully employed to ſow the Female Soil; though they eagerly twine in amorous Folds, and dart their humid Tongues, and bite, and ardently receive each other's Breath, 'tis all to no Purpoſe; for they can carry nothing away from the Parts they ſtrain, nor can Bodies pierce or be in Bodies loſt: For This they ſometimes wiſh, for This they contend when they engage; ſo eagerly are they entangled in the Nets of Love, that their very Limbs are diſſolved in the Exceſs of Pleaſure. Then, when the collected Luſt has burſt from the Nerves, a Ceſſation of the violent Ardour enſues for a while; but the ſame Rage ſoon returns, the ſame Fury is renewed, and again they ſtrive to touch the Point, the End of their Deſires: They can find no Device to ſubdue the Pain they feel, and ſo they pine and languiſh by a ſecret Wound.

And then, [q] they waſte their Strength, and periſh

[q] Here the Poet enumerates the many Inconveniencies that attend upon the Paſſion of Love, which at beſt is a wretched Slavery,

Adde quòd alterius ſub nutu degitur ætas.
Labitur interea Res, & Vadimonia fiunt,
Languent officia, atque ægrotat fama vacillans;
Unguenta, & pulchra in pedibus Sicyonia rident:
Scilicet & grandes viridi cum luce ſmaragdi
Auro includuntur, teriturque thalaſſina veſtis
Aſſiduè, & Veneris ſudorem exercita potat:
Et benè parta patrum fiunt Anademata, Mitræ:
Interdum in pallam, ac Meliteñſia, Ceaque vertunt.
Eximia veſte & victu Convivia, Ludi,
Pocula crebra, Unguenta, Coronæ, Serta parantur;
Nequicquam: Quoniam medio de fonte leporum
Surgit amari aliquid, quod in ipſis floribus angat:
Aut quòd conſcius ipſe Animus ſe fortè remordet,
Deſidiosè agere ætatem, luſtriſque perire:
Aut quòd in ambiguo Verbum jaculata reliquit:
Quòd cupido adfixum cordi viveſcit, ut Ignis:
Aut nimium jactarè oculos, aliumve tueri
Quod putat, in voltuque videt veſtigia riſus.
  Atque in Amore mala hæc proprio, ſummèque ſecundo
Inveniuntur, in adverſo verò, atque inopi ſunt,
Prendere quæ poſſis oculorum lumine aperto,
Innumerabilia: ut meliùs vigilare ſit ante,
Qua docui ratione, cavereque, ne inlaqueeris.
Nam vitare, plagas in amoris ne laciamur,

Non

periſh by the Labour they go through. And more, they lie under the Power of another's Will; while their Fortune decays and their Debts increaſe, their Duty is neglected and their tottering Reputation ſickens. Rich Pearls, and fine Shoes of *Sicyon*, ſhine upon the Feet of their Miſtreſs; the large Emeralds, with their green Luſtre, are ſet in Gold; and the blue Veſt is daily ſtained, and continually in uſe drinks up the Sweat of Luſt. The Family Eſtate, acquired with Honour, is changed into Coronets of Ribbands, and Head-dreſſes ſparkling with Jewels; and is ſometimes turned into coſtly Gowns, or Garments of *Melita*, or *Cean* Robes. Beſides, they add to theſe the Luxury of Feaſts and ſtately Couches, Plays, frequent Carouſals, Crowns and Garlands. But in vain! for ſome Bitter bubbles up from the very Fountain of his Delight, and poiſons all his Sweets; either his own guilty Mind ſtings him for leading ſuch a Life of Sloth, and murdering ſo large a Part of his Time; or his Miſtreſs has dropped ſome doubtful Word, which kindles in his fond Heart like Fire; or he thinks ſhe has thrown her Eyes too freely abroad, and glanced upon another, and he diſcovers the Remains of a ſmiling Pleaſure upon her Face.

These are the Misfortunes that attend an Amour ever ſo fortunate and conſtant; but the Miſeries of a wretched and diſaſtrous Love are innumerable, and obvious to every one with his Eyes open. You had better therefore be upon your Guard beforehand, and obſerve the Rules I have laid down to prevent your being caught; for 'tis not ſo difficult to avoid being drawn into the Snares

Slavery, obnoxious to Suſpicions and fantaſtical Surmiſes. It waſtes the Strength; for, if we believe ſome Phyſicians, one Drachm of Semen weakens a Man as much as the Loſs of ſixty Ounces of Blood.

Non ita difficile eſt quàm captum retibus ipſis
Exire : & validos Veneris perrumpere nodos.
Et tamen implicitus quoque poſſis, inque peditus
Effugere infeſtum, niſi Tute tibi obvius obſtes :
Et prætermittas Animi vitia omnia primùm ;
Tum quæ Corpori' ſunt ejus, quam percupis, ac vis.
Nam hoc faciunt Homines plerumque cupidine cæci :
Et tribuunt ea, quæ non ſunt his commoda verè.
Multimodis igitur pravas, turpeiſque videmus
Eſſe in deliciis, ſummoque in honore vigere.
' *Atque aliós alii inrident, Veneremque süadent*
' *Ut placent, quoniam fædo adflictantur amore :*
' *Nec ſua reſpiciunt miſeri mala maxima ſæpe.*
Nigra, μελίχροος· *eſt : Immunda & Fætida,* ἄκοσμος·
Cæſia παλλάδιον· *Nervoſa, & Lignea,* δορκάς·
Parvola, Pumilio, χαρίτων ἴα, *tota merum ſal :*
Magna, atque Immanis, κατάπληξις, *plenaque honoris:*
Balba, loqui non quit, τραυλίζει· *Muta, pudens eſt.*
At Flagrans, Odioſa, Loquacula, λαμπάδιον *fit.*
Ἰσχνὸν ἐρωμένιον *tum fit, quom vivere non quit*
Præ macie : ῥαδινὴ *verò eſt, jam Mortua tuſſi.*
At Gemina & Mammoſa, Ceres eſt ipſa ab Iaccho.
Simula, σιληνὴ, *ac Satyra'ſt, Labioſa,* φίλημα·
Cætera de genere hoc longum'ſt ſi dicere coner.

Sed

of Love, as to diſengage yourſelf from the Net when you are taken, and to break through the ſtrong Knots which *Venus* ties cloſe upon all her Votaries.

AND though you are entangled and within the Net, you may ſtill avoid much of the Evil, unleſs you wilfully ſet yourſelf againſt the Remedy. Firſt then, You are to take no notice of any Imperfections, either of Mind or Body, you find in the Miſtreſs you admire and fondly love. All Lovers, blinded by their Paſſion, obſerve this, and attribute Beauties to the Fair, to which they have no real Pretence; and therefore the Ugly and Deformed we ſee have their ſeveral Charms, and ſecure a ſovereign Power over their Admirers. The Lover that has ſuch a forbidding Dowdy for a Miſtreſs, is laughed at by his Companions, who adviſe him to appeaſe *Venus* and render her propitious; while they think nothing of their own greater Misfortunes, in placing their Eſteem upon others leſs lovely and leſs beautiful. The Black ſeems brown; the Naſty and the Rank is negligent; the Owl-eyed is a *Pallas*; the Sinewy, with her dry Skin, is a little Doe; the Dwarf, of the Pygmy Breed, is one of the Graces, Wit and Spirit all over; the Large and Gigantick is ſurpriſing and full of Majeſty. If ſhe ſtammers and cannot ſpeak, then ſhe liſps; ſhe is modeſt if ſhe is dumb; but the Turbulent, the Violent and the Talkative, is all Fire. If ſhe is worn away with a Conſumption, ſhe is my ſlender Love; you may ſpan her in the Waiſt if ſhe is dying with a Cough. The two-handed Virago, with her full Duggs, is *Ceres* herſelf, a Bedfellow for *Bacchus*; the Flat-noſed is my *Silene*, a little Satyr; the pouting Lip is a very Kiſs. It would be endleſs to ſay all that might be offered upon this Subject.

Sed tamen eſto jam quantovis oris honore,
Quoi Veneris membris vis omnibus exoriatur:
Nempe aliæ quoque ſunt, nempe hac ſine viximus antè;
Nempe eadem facit, & ſcimus facere omnia turpi:
Et miſeram tetris ſe ſuffit odoribus ipſa,
Quam famulæ longè fugitant, furtimque cachinnant.
At lacrymans excluſus Amator limina ſæpe
Floribus & Sertis operit, poſteiſque ſuperbos
Unguit Amaracino, & foribus miſer oſcula figit.
Quem ſi jam admiſſum, venientem offenderit aura
Una modo, cauſas abeundi quærat honeſtas:
Et meditata diu cadat altè ſumpta querela:
Stultitiæque ibi ſe damnet, tribuiſſe quod illi
Plus videat, quàm mortali concedere par eſt.
Nec Veneres noſtras hoc fallit: quò magis ipſæ
Omnia ſummopere hos vitæ poſtſcenia celant.
Quos retinere volunt, adſtrictoſque eſſe in amore:
Nequicquam: Quoniam tu animo tamen omnia poſſis
Protrahere in lucem, atque omneis anquirere niſus.
Et ſi bello animo'ſt, & non odioſa viciſſim,
Prætermittet te humanis concedere rebus.
Nec mulier ſemper ficto ſuſpirat amore:
Quæ complexa viri corpus cum corpore jungit.
Et tenet adſuctis humectans oſcula labris.
Nam facit ex animo ſæpe, & communia quærens
Gaudia, ſollicitat ſpatium decurrere amoris:
Nec ratione alia Volucres, Armenta, Feræque,

BUT allow your Miſtreſs all the Advantages of Beauty in her Face, that Charms of Love ariſe from every Limb, yet there are others as lovely as ſhe, and Time was when you lived without her; and we know ſhe plays the ſame Game that homelier Women can do as well. And then ſhe perfumes, rank as ſhe is with filthy Smells, that her Maids cannot come near her, but make a Jeſt of her when they are not ſeen.

BUT when the Lover is ſhut out, and all in Tears crowns the Gates with Flowers and Garlands, and pours Ointments upon the ſtately Pillars, and the Wretch warms the very Doors with his Kiſſes; yet when he is admitted, and one Blaſt from her Armpits ſtrikes full upon him as he enters, he preſently ſeeks for a plauſible Reaſon to be gone, and all his long-laboured Speeches of Complaint are forgotten, and he condemns himſelf of Folly for raiſing ſuch Ideas of her Beauty, which no Mortal could lay Claim to. This Secret is well known to Women of the Town; and they act cunningly behind the Scenes as it were, and conceal their Failings from thoſe whoſe Love they would ſecure fixed and laſting to themſelves: But all to no Purpoſe; for you may eaſily imagine how Things are, and diſcover all, and prevent their utmoſt Endeavours to deceive you. And if your Miſtreſs be of an open Temper, and not ſullen and reſerv'd, ſhe will not ſo much as hide her Defects, but hope you will allow for Imperfections that are common to the whole Sex.

NOR does the Woman always breathe with feigned Deſire when joined in ſtrict Embrace with him ſhe loves, when ſhe holds him cloſe, and on his preſſed Lips imprints her balmy Kiſſes; for ſhe often does it heartily, and ſtrives to ſhare the common Joy, and run the Heats with Vigour to the Goal. Nor for any other Reaſon would Birds,

Et Pecudes, & Equæ maribus ſubſidere poſſent,
Si non, ipſa quòd illorum ſubat, ardet abundans,
Natura, & venerem ſalientum læta retractat.
Nonne vides etiam, quos mutua ſæpe voluptas
Vinxit, ut in vinclis communibus excrucientur?
In triviis non ſæpe Canes diſcedere aventes,
Divorſi cupidè ſummis ex viribu' tendunt,
Cùm interea validis Veneris compagibus hærent?
Quod facerent nunquam, niſi mutua gaudia nôſſent:
Quæ lacere in fraudem poſſent, vinctoſque tenere.
Quare etiam atque etiam (ut dico) eſt communi' voluptas.

Et commiſcendo cùm Semen fortè virile
Fœmina commulxit ſubita vi, conripuitque;
Tum ſimiles Matrum materno ſemine fiunt:
Ut Patribus patrio: ſed quos utriuſque figuræ
Eſſe vides juxtim, miſcenteis volta Parentum:
Corpore de Patrio, & Materno ſanguine creſcunt,
Semina quom Veneris ſtimulis excita per artus
Obvia conflixit conſpirans mutuus ardor:
Et neque utrum ſuperavit eorum, nec ſuperatum'ſt.
Fit quoque, ut interdum ſimiles exſiſtere Avorum
Poſſint, & referant Proavorum ſæpe figuras,
Propterea, quia multa modis primordia multis
Miſta ſuo celant in corpore ſæpe Parentes,
Quæ Patribus Patres tradunt à ſtirpe profecta.
Inde Venus varia producit ſorte figuras:
Majorumque refert voltus, voceſque, comaſque.
Quandoquidem nihilo minùs hæc de ſemine certo
Fiunt, quam Facies, & Corpora, Membraque nobis.
Et Muliebre oritur patrio de ſemine ſæclum:
Maternoque mares exſiſtunt corpore creti.
Semper enim partus duplici de ſemine conſtat:

Atque,

and Herds, and wild Beaſts, and Cattle, and Mares, bear the Weight of the Male, if they did not burn and rage with equal Heat, and ſo receive with Joy the luſty Leap. Don't you obſerve how thoſe whom mutual Pleaſure has bound faſt, are tortured as it were in common Bonds? how Dogs in the Street are ſtriving to untie the Knot, and pull with all their Might a different Way, yet they ſtick faſt in the ſtrong Ties of Love? This they would never do if not engaged in mutual Joys, which cheat them with Delight and hold them faſt. The Pleaſure then is common to them both.

Why the Child like the Parents.

If, in the mixing of the Seed, the Female draws in and ſnatches with ſudden Force the Male Seed, the Child, the Female Seed prevailing, is like the Mother, as he is like the Father if his prevails. But Thoſe who, you obſerve, expreſs jointly the Reſemblance, and mingle the Features of both Parents, are formed equally from the Juices of both; for then the mutual Ardor of the Combatants has juſtly tempered the conflicting Seed, which, raiſed by the Stings of *Venus*, is ſent in due Proportion through all the Limbs. The Succeſs of the Battle is equal, neither is Victor nor vanquiſhed. It happens ſometimes that Children are like their Grandfathers, and reſemble the Perſons of their remote Anceſtors, becauſe the Parents have frequently many Seeds concealed, and variouſly mingled in their Bodies, which preſerve the Features of the Family, and are delivered down from one to another. Theſe *Venus* forms into different Figures, as the Qualities of the Seeds require, and repreſents the Complexion, the Voice and Hair of the Progenitors; for Theſe no leſs ariſe from proper Seeds, than the Face, the Body or any Parts of it. And a Female Child proceeds partly from the Father's Seed, and a Male from the Mother's, for the Iſſue always conſiſts of the Seed of

Or like their Grandfathers.

Atque, utri ſimile eſt magis id, quodcunque creatur,
Ejus habet plus parte æqua, quod cernere poſſis,
Sive Virûm ſuboles ſive 'ſt Muliebris origo.

Nec divina ſatum genitalem Numina quoiquam
Abſterrent, pater à natis ne dulcibus unquam
Appelletur, & ut ſterili Venere exigat ævum;
Quod plerique putant: Et multo ſanguine mæſti
Conſpergunt aras, adolentque altaria donis,
Ut gravidas reddant uxores ſemine largo:
Nequicquam Divûm numen, ſorteiſque fatigant.
Nam ſteriles nimium craſſo ſunt ſemine partim:
Et liquido præter juſtum, tenuique viciſſim.
Tenue, locis quia non potis eſt adfigere adhæſum,
Liquitur extemplo, & revocatum cedit ab ortu:
Craſſius hoc porro, quoniam concretius æquo
Mittitur; aut non tam prolixo provolat ictu,
Aut penetrare locos æquè nequit; aut penetratum,
Ægrè admiſcetur muliebri Semine Semen.

Nam multùm harmoniæ Veneris differre videntur.
Atque alias alii complent magis, ex aliiſque
Suſcipiunt aliæ pondus magis, inque graveſcunt.
Et multæ ſteriles Hymenæis antè fuerunt
Pluribus, & nactæ poſt ſunt tamen, unde puellos
Suſcipere, & partu poſſent diteſcere dulci:
Et, quibus antè domi fœcundæ ſæpe nequiſſent
Uxores parere, inventa 'ſt illis quoque compar
Natura, ut poſſent natis munire ſenectam.

both; but the greater Likeneſs it bears to the one than to the other, it partakes of more than a juſt Proportion of the Seed of that Sex, which you eaſily appehend, whether the Child be Male or Female.

[r] NOR do the *Divinities* above ever deſtroy the prolific Virtue of the Seed, or prevent a Man's being called Father by a Number of ſweet Children, or curſe him all his Life with unfruitful Love, as ſome vainly think, and therefore with much Concern ſtain the Altars with the Blood of many Victims, and make them ſmoke with Clouds of Incenſe, to implore a Bleſſing upon the ſhowery Seed and promote Conception; but to no Purpoſe they tire out the *Gods* and fatigue the Oracles, for they are frequently unfruitful, becauſe the Seed is too thick or too thin. The thin Seed will not ſtay in the Parts where it was injected, but ſoon diſſolves and flows back; and the Thick has no Effect, becauſe it is ſent out heavy and condenſed, or it does not carry home to the Mark, or it cannot rightly penetrate the Paſſages, or if it does, it is not at all diſpoſed to mix kindly with the Female Juice. *Of Barrenneſs.*

FOR the Harmony of Love between the Sexes is widely different; Men are more prolific with ſome Women, and Women conceive more readily, and ſwell with their Burden after the Embrace of ſome Men, than with others. Many Women have been barren in a firſt and ſecond Marriage, and been fruitful at laſt, have borne luſty Boys, and bleſſed the Family with a ſweet Offspring; and Men, after marrying ſeveral Times without Iſſue, have at length found out a Wife of a Conſtitution agreeable to their own, and ſupported their old Age

[r] The Poet, after his uſual Cuſtom, falls foul upon the *Gods* and ſays, 'Tis to no Purpoſe to apply to them for Children, for they never curſe with Barrenneſs either Man or Woman.

Uſque adeo magni refert, ut Semina poſſint
Seminibus commiſceri genitaliter apta,
Craſſaque conveniant liquidis, & liquida craſſis,
Quæ quoi juncta viro ſit fœmina per Veneris res.
  Atque adeo refert, quo victu vita colatur.
Namque aliis rebus concreſcunt Semina membris,
Atque aliis extenuantur, tabentque viciſſim.
Et quibus ipſa modis tractetur blanda Voluptas,
Id quoque permagni refert: Nam more Ferarum,
Quadrupedumque magis ritu, plerumque putantur
Concipere Uxores, quia ſic loca ſumere poſſunt
Pectoribus poſitis, ſublatis Semina lumbis.
Nec molles opu' ſunt motus Uxoribus hilum.
Nam Mulier prohibet ſe concipere, atque repugnat,
Clunibus ipſa viri Venerem ſi læta retractet:
Atque exoſſato ciet omni pectore fluctus.
Eicit enim Sulci recta regione, viaque
Vomerem, atque locis avertit Seminis ictum.
Idque ſua cauſa conſuerunt Scorta moveri,
Ne complerentur crebrò, gravidæq; jacerent,
Et ſimul ipſa viris Venus ut concinnior eſſet:
Conjugibus quod nil noſtris opus eſſe videtur.
  Nec divinitus eſt interdum, Veneriſque ſagittis
Deteriore fit ut forma Muliercula ametur.

Nam

with many Children. Of ſo great Concern it is, that the Seed of both ſhould kindly mix, and mutually glow with genial Heat; that the Thick and the Thin ſhould incorporate together; and that the Woman, in the Art of Love, ſhould engage with a Man whoſe Nature ſhould be ſuitable to her own.

AND the Food we live upon is of no ſmall Importance; for the Seed increaſes through the Limbs by ſome Meats, and it becomes watery and feeble by others.

I can tranſlate no further. Dryden, *in his* Miſcellanies, *goes on in full Vigour, and keeps up to the Original.*

OF like Importance is the Poſture too,
In which the genial Feat of Love we do.
For, as the Females of the Four-foot Kind
Receive the Leapings of their Males behind;
So the good Wives, with Loins uplifted high,
And leaning on their Hands, the fruitful Stroke
  may try.
For in that Poſture they will beſt conceive;
Not when ſupinely laid they friſk and heave:
For active Motions only break the Blow,
And more of Strumpet than of Wives they ſhew;
When anſwering Stroke with Stroke, the min-
  gled Liquors flow.
Endearment eager, and too briſk a Bound
Throw off the Plough-ſhare from the furrow'd
  Ground.
But common Harlots in Conjunction heave,
Becauſe 'tis leſs their Bus'neſs to conceive
Than to delight and to provoke the Deed;
A Trick which honeſt Wives but little need.

NOR is it from the *Gods*, or the Darts of *Venus*, that a Woman of ordinary Beauty is ſometimes beloved. She often ſecures the Affection by her

diſcreet

Nam facit ipſa ſuis interdum Fœmina factis,
Morigeriſque modis, & mundo corpori' cultu,
Ut facilè inſueſcat ſecum Vir degere vitam.
Quod ſupereſt, Conſuetudo concinnat amorem.
Nam leviter quamvis, quod crebro tunditur ictu,
Vincitur in longo ſpatio tamen, atque labaſcit.
Nonne vides, etiam guttas in ſaxa cadenteis
Humoris longo in ſpatio pertundere ſaxa?

diſcreet Conduct, by the Sweetneſs of her Deportment, and an Exactneſs in the Decency of her Perſon; ſo that a Man, by Uſe, may ſpend his Life happily with her.

To ſum up all: It is Cuſtom that reconciles the Delights of Love; for beat upon any thing with conſtant Blows, though ever ſo lightly, it is overcome at laſt, and crumbles to Pieces. Have not you obſerved how Drops of Water falling upon a hard Stone, by Length of Time, wear it away?

The End of the Fourth Book.

9 NO 58

THE

THE ARGUMENT OF THE FIFTH BOOK.

THE Poet begins this Book with the Praiſe of Epicurus, *whom he proclaims to be a* God, *becauſe his Divine Diſcoveries have been more uſeful to Mankind than the Inventions of* Ceres, *or of* Bacchus, *or than the many glorious Exploits of* Hercules. *He then lays down the Argument of this Book, and ſhews the Connection between the Subjects he is now going to treat of, and thoſe of which he has diſputed in the preceding Parts of his Poem; and being now to explain the firſt Riſe and future Diſſolution of the World, he teaches that the Earth, the Sea, the Heavens, the Sun and Moon, are mortal; that they are not animated nor endowed with a Divine Body, nor, as the* Stoicks *believed, are they Parts of* God *himſelf. He aſſerts that neither the Heavens, as the general Opinion is, nor indeed any Part or Parts of the World, are the Manſions or Abodes of the* Gods; *and that none may believe that the World was made by the* Gods, *and is therefore immortal, he heaps up ſeveral Reaſons, drawn as well from the Nature of the* Gods *as from the Defectiveneſs and ill Contrivance of this vaſt Frame of the Univerſe, by which he endeavours to prove that it*

it was not the Workmanſhip of a Deity. *He argues that the Four Elements, Earth, Water, Air and Fire, of which the World conſiſts, are nevertheleſs generated and mortal; and conſequently that the World itſelf once had a Beginning, and will have an End. And he proves, by ſeveral other Arguments, that this univerſal Frame has not exiſted from all Eternity, nor will be immortal and remain undiſſolved to all Futurity. Then he deſcribes the Riſe or Birth of the World; and among all the Phyſiologers there is not a Deſcription of it more likely to be true, nor more lively and beautiful. The Atoms are moved by their own Weight; they meet; this makes them rebound; and according to the Difference of the Stroke or Weight, the Reſilition is made into different Places, where they combine and grow into Bodies. He propoſes many Difficulties concerning the Motions of the Heavens and of the Planets, but determines nothing. He teaches why the whole Frame of the Earth, which is a heavy Body, hangs in the Air without being ſupported by any Foundation; and then takes the Dimenſions of the Sun, Moon and Stars, and pronounces them neither bigger nor leſs than they ſeem to us to be. He gives ſeveral Reaſons of the Summer and Winter Solſtices; tells what cauſes Night; why* Aurora, *or the Morning, precedes the Sun; why the Nights and Days mutually overcome, and chace away each other by turns; why the Moon changes her Face and Figure, and why the Sun and Moon are ſometimes eclipſed. He deſcends from the Heavens, and deſcribes the firſt Riſe of Herbs, Trees, Birds, Beaſts and Man, and adjuſts the Order in which each Kind was produced out of the Earth. He ſays that Monſters, or certain imperfect Animals, might be produced in the Beginning of the World, but Nature denied them the Power to propagate their Kinds. Hence he takes Occaſion to deride and explode all* Chimæra's, Centaurs, Scylla's, *and*

and other fabulous Productions, invented by the Poets; and denies there ever were any ſuch Prodigies of Nature, or ever will be. He deſcribes the Strength of the firſt Men, their robuſt Conſtitution of Body, their Meanneſs of Living, their Food, Wit, Manners, Houſes and Marriages. He teaches that after Fire was caſt down upon Earth by Lightning, Men began to be more civilized; and having invented the dreſſing of Meat, fared more deliciouſly than before. Then they firſt eſtabliſhed Societies, entered into Leagues and Alliances, divided the Land among themſelves, and choſe Kings to govern them, who were either the moſt ſtrong, the moſt beautiful, or the moſt witty among them, and were elected for one or more of theſe three Reaſons. But at length Gold being found out, the Richer commanded the Poorer; and Envy ſpringing up among them, a Sedition aroſe, the Kings were depoſed, Republicks were inſtituted, and Laws eſtabliſhed to ſecure every one in his Property. He treats of the Fear of the Gods, *and of the firſt Riſe of Religion, which he aſcribes merely to Ignorance of the Divine Nature, and of natural Cauſes. And to the End of the Book he teaches how the ſeveral Metals, Gold, Silver, Braſs, Iron and Lead, came firſt to be diſcovered. He mentions the firſt Arts of War, and the Weapons then uſed; and concludes with the Invention and Progreſs of Spinning, Weaving, Agriculture, Sailing, Muſick, Poetry and other Arts.*

T. Lu-

T. Lucretii Cari

DE

RERUM NATURA.

LIBER QUINTUS.

QUIS potis eſt dignum pollenti pectore carmen
Condere, pro rerum majeſtate, hiſque repertis?
Quiſve valet verbis tantùm, qui fundere laudes
Pro meritis Ejus poſſit, qui talia nobis
Pectore parta ſuo, quæſitaque præmia liquit?
Nemo (ut opinor) erit mortali corpore cretus.
Nam ſi, ut ipſa petit majeſtas cognita rerum,
Dicendum 'ſt: Deus ille fuit, Deus, inclute Memmi,



G. v. Gouwen Sculp. Amst.

T. Lucretius Carus,

OF THE

NATURE *of* THINGS.

THE

FIFTH BOOK.

WHO can, with all his Soul inſpired, compoſe fit Numbers, worthy the Majeſty of ſo great Things, of theſe Diſcoveries? Or who, in Words alone, can ſing [a] His Praiſe, and equal His Deſerts, who from the Labour of his Mind has left ſuch Benefits, and beſtowed Rewards ſo glorious on Mankind? No mortal Man alive, as I conceive; for could I raiſe my Verſe to reach the Dignity of Things He knew, He was a *God*, my Noble *Memmius*, a

[a] He makes a *God* of *Epicurus*, and ſays his Diſcoveries are more uſeful to Mankind than the Inventions of *Ceres* and *Bacchus*, and the Labours of *Hercules*. He taught true *Wiſdom*, which drives all Uneaſineſs from the Mind, and inſtructs us rightly in the Nature of Things; for the *Epicureans* were ſo modeſt, that the Name of *Wiſdom* they applied only to their own Philoſophy.

Qui Princeps vitæ rationem invenit eam, quæ
Nunc appellatur SAPIENTIA : *quiq; per artem*
Fluctibus è tantis vitam, tantiſque tenebris,
In tam tranquillo, & tam clara luce locavit.
Confer enim Divina aliorum antiqua reperta.
Namque Ceres fertur fruges, Liberque liquoris
Vitigeni laticem mortalibus inſtituiſſe ;
Cùm tamen his poſſet ſine rebus Vita manere :
Ut famæ'ſt aliquas etiam nunc vivere genteis.
At benè non poterat ſine puro pectore vivi.
Quò magis hic meritò nobis Deus eſſe videtur,
Ex quo nunc etiam per magnas didita genteis
Dulcia permulcent animos ſolatia vitæ.
Herculis antiſtare autem ſi facta putabis,
Longiùs à vera multò ratione ferere ;
Quid Nemæus enim nobis nunc magnus hiatus
Ille Leonis obeſſet, & horrens Arcadius Sus ?
Denique quid Cretæ taurus, Lernæaque peſtis
Hydra venenatis poſſet vallata colubris ?
Quidve tripectora tergemini vis Geryonaï ?
Et Diomedis equi ſpirantes naribus ignem
Thracen, Biſtoniaſque plagas, atque Iſmara propter,
Tantopere officerent nobis ? Unciſque timendæ
Unguibus Arcadiæ volucres Stymphâla colentes ?
Aureaque Heſperidum ſervans fulgentia mala
Aſper, acerba tuens, immani corpore Serpens,
Arboris amplexus ſtirpem : quid deniq; obeſſet,
Propter Atlantæum littus, pelageque ſevera,
Quò neque noſter adit quiſquam, neque Barbarus audet ?
Cætera de genere hoc quæ ſunt portenta peremta,
Si non victa forent, quid tandem viva nocerent ?
Nil, ut opinor : Ita ad ſatiatem terra Ferarum

Nunc

God he was, who firſt found out that Rule of Life which is now called *True Wiſdom*; and who this human Life, ſo toſſed with Storms, and ſo o'erwhelmed in Darkneſs, has rendered by his Art ſo calm, and placed in ſo clear a Light.

COMPARE the Benefits long ſince found out by Thoſe who now are *Gods*. *Ceres*, they ſay, diſcovered firſt the Uſe of Corn, and *Bacchus* gave to Men the Knowledge of the Vine and its ſweet Juice. Yet Men might ſtill have lived without both theſe, as many Nations, we are told, do now. But no true Life could be, without the Mind eaſy and free; and therefore with better Right is he to us a *God*, whoſe gentle Rules, received throughout the World, beſtowed on Men Tranquility and Peace.

IF you ſhould think the great Exploits of *Hercules* exceeded His, you are carried far from Truth. For how could the wide, gaping Jaws of the *Nemæan* Lion, or the terrible *Arcadian* Boar, affright us now? How could the Bull of *Crete*, or *Hydra*, the Plague of *Lerna*, incompaſſed with his poiſonous Snakes? Or *Geryon*, with his tripple Face, and the collected Strength of his three Bodies? Or what can we now ſuffer from *Diomedes*' Horſes, from their Noſtrils breathing Fire, dreadful to *Thrace*, the *Biſtonian* Plains, and all about Mount *Iſmarus*? Or what from the *Arcadian* Birds of *Stymphalus*, feared for their crooked Talons? Or that huge Dragon, fierce and terrible in Look, that, twining round the Tree, guarded the Golden Fruit of the *Heſperides*? How could he hurt us here, removed far from us near the *Atlantick* Shore, and the rough Seas, where neither *Roman* nor *Barbarian* dared to viſit? And other Monſters which that Hero ſlew, had they not been ſubdued, how could they hurt us now, were they alive? Not in the leaſt, I think. For now the World abounds

Nunc etiam ſcatit, & trepido terrore repleta'ſt
Per nemora ac monteis magnos, ſylvaſque profundas:
Quæ loca vitandi plerumque eſt noſtra poteſtas.
At niſi purgatum'ſt pectus, quæ prælia nobis,
Atque pericula tunc ingratîs inſinuandum?
Quantæ conſcindunt hominem Cuppedinis acres
Sollicitum curæ? Quantique perinde timores?
Quidve Superbia, Spurcities, Petulantia, quantas
Efficiunt cladeis? Quid Luxus, Deſidieſque?
Hæc igitur qui cuncta ſubegerit, ex animoque
Expulerit dictis, non armis; nonne decebit,
Hunc Hominem numero Divûm dignarier eſſe?
Cùm bene præſertim multa, ac divinitus ipſis
Immortalibu' de Divis dare dicta ſuërit;
Atque omnem rerum Naturam pandere dictis.
Quoius ego ingreſſus veſtigia, nunc rationes
Perſequor, ac doceo dictis, quo quæque creata
Fœdere ſint, in eo quàm ſit durare neceſſum:
Nec validas ævi valeant reſcindere leges.
Quo genere in primis Animi natura reperta'ſt,
Nativo primo conſiſtere corpore creta:
Nec poſſe incolumis magnum durare per ævum:
Sed Simulacra ſolere in ſomnis fallere mentem,
Cernere cùm videamur eum, quem vita reliquit.
Quod ſupereſt, nunc me huc Rationis detulit ordo,

with frightful Beaſts, that fill with dreadful Terror the Foreſts, the high Mountains and thick Woods; yet theſe Places commonly 'tis in our Power to avoid.

But unleſs the Mind be purged, what Wars within, what Dangers wretched Mortals muſt endure? What piercing Cares of fierce Deſire muſt tear the Minds of Men? And then, what anxious Fears? What Ruin flows from Pride, from Villany from Petulance? What from Luxury and Sloth?

The Man therefore that has ſubdued theſe Monſters, and drove them from the Mind by Precept, not by Force; ſhould not this Man be worthy to be numbered with the *Gods?* eſpecially ſince of theſe Immortal Deities he has ſpoken nobly and at large, and by his Writings has explained to us the Laws of Univerſal Nature?

His Steps I follow, and now perſue his Rules, and by my Verſe I teach, that Things muſt needs ſubſiſt by the ſame Laws by which they were firſt formed; nor can they break through the ſtrong Bonds that Nature has fixed to their Being. Of this ſort the Soul, in the firſt Place, I have proved to be originally derived from mortal Seeds, nor can it remain eternally undiſſolved; and that Images commonly deceive the Mind in our Dreams, when we fancy we ſee a Perſon that has been long ſince dead.

And what remains but now, [b] as the Order of

[b] In this Book he propoſes to ſhew, that the World had a Beginning, and will have an End; to deſcribe the Riſe of the World, and of Animals real and feigned by the Poets; how Names came to be given to Things; how mutual Society aroſe from Speech, whence proceeded Religion and the Fear of the *Gods*. And then he will explain the Motions of the Heavens, the Courſes and Revolutions of the Sun, the Moon, and other Planets and Stars; and demonſtrate that they are whirled about by the Force of Nature only, without the Help or Aſſiſtance of Providence.

Ut mihi, mortali conſiſtere corpore Mundum,
Nativumque ſimul, ratio reddunda ſit, eſſe.
Et quibus ille modis congreſſus Materiaï
Fundârit Terram, Cælum, Mare, Sidera, Solem,
Lunaïque globum; tum quæ tellure Animantes
Exſtiterint: Et quæ nullo ſint tempore natæ.
Quove modo genus Humanum variante loquela
Cœperit inter ſe veſci per nomina rerum:
Et quibus ille modis Divûm metus inſinuârit
Pectora, terrarum qui in orbi ſancta tuetur
Fana, Lacus, Lucos, Aras, Simulacraque Divûm.
Præterea, Solis curſus, Lunæque meatus
Expediam, qua vi flectat Natura gubernans:
Ne fortè hìc inter Cælum, Terramque reamur
Libera ſponte ſua curſus luſtrare perenneis,
Morigera ad fruges augendas, atque animanteis:
Neve aliqua Divûm volvi ratione putemus.
Nam, bene qui didicere Deos ſecurum agere ævum,
Si tamen interea mirantur qua ratione
Quæque geri poſſint, præſertim rebus in illis,
Quæ ſupera caput ætheriis cernuntur in oris;
Rurſus in antiquas referuntur Relligiones,
Et Dominos acreis adſciſcunt, omnia poſſe
Quos miſeri credunt, ignari quid queat eſſe,
Quid nequeat; finita poteſtas denique quoique
Quanam ſit ratione, atque altè terminus hærens.
Quod ſupereſt, ne Te in promiſſis plura moremur,
Principiò, Maria ac Terras, Cælumque tuere:
Horum naturam triplicem, tria corpora, Memmi,

Treis

my Deſign requires to convince, by proper Reaſons, that this World is formed of mortal Seeds; that it began to be, and muſt have an End; and to ſhew how the Seeds of Matter were united and diſpoſed, to produce the Earth, the Heavens, the Sea, the Stars, the Sun and Moon; and then what Creatures ſprung from the Earth, and what never had a Being; and how the human Race, with various Language, began to give Names to Things, and to converſe together.

And by what means that Dread of Deities above, firſt crept into the Heart, which preſerves the Holy Things throughout the World; the Temples, the Lakes, Groves, Altars, and Images of the *Gods*.

Besides, I ſhall explain the Courſe of the Sun and Moon, and by what over-ruling Force Nature directs their Motions; leſt you ſhould ſuppoſe theſe Luminaries travel their conſtant Stages freely and of their own accord between Heaven and Earth, and by their kind Influence promote the Growth of Fruits and the whole Animal Creation; or conceive that they are rolled about by the Will of the *Gods*. For thoſe who well know that the *Gods* live a Life of Eaſe, if they ſhould wonder by what Power the World is carried on, eſpecially in the Things they ſee over their Heads in the Heavens above, they relapſe again into their old Superſtition; they raiſe over themſelves a Set of cruel Tyrants, who the Wretches fancy can do all Things, becauſe they know nothing of what can or what cannot be, or by what means a finite Power is fixed to every Being, and a Boundary immoveable which it cannot paſs.

The World mortal.

And therefore, to keep you no longer in Suſpenſe in what I promiſed, take a View, in the firſt Place, of the Seas, the Earth and the Heavens; this triple Nature, theſe three Bodies, my

Treis ſpecies tam diſſimileis, tria talia texta,
Una dies dabit exitio: multoſque per annos
Suſtentata ruet moles & machina Mundi.
Nec me animi fallit, quàm res nova, miraque menti
Accidat, Exitium Cœli Terræque futurum:
Et quàm difficile id mihi ſit pervincere dictis:
Ut ſit, ubi inſolitam rem adportes auribus antè,
Nec tamen hanc poſſis Oculorum ſubdere viſu,
Nec jacere indu Manus, via quà munita fidei
Proxima fert humanum in pectus, templaque mentis:
Sed tamen effabor: dictis dabit ipſa fidem res
Forſitan, & graviter terrarum motibus orbis
Omnia conquaſſari in parvo tempore cernes:
Quod procul à nobis flectat Fortuna gubernans:
Et Ratio potiùs, quàm Res perſuadeat ipſa,
Succidere horriſono poſſe omnia victa fragore.
Qua priùs aggrediar quàm de re fundere fata
Sanctiùs, & multò certa ratione magis quàm
Pythia, quæ tripode è Phœbi, lauroque profatur:
Multa tibi expediam doctis ſolatia dictis:

Memmius, three Beings of ſo different a Frame, three ſo wonderfully formed, one Day ſhall put an End to; and the whole Maſs and Fabrick of the World, that has ſtood for many Ages, ſhall tumble to Pieces.

I know how this, this future Ruin of Heaven and Earth, ſeems ſtrange and ſurpriſing to your Apprehenſions, and how difficult it is to convince you of the Truth of it. This is a common Caſe, when you offer a Subject to the Ear it has been unuſed to, and which you cannot diſcover with your Eyes, nor feel with your Hands, the Ways by which Knowledge and Belief generally find a Paſſage to the Breaſt, and affect the Mind. I'll go on however. The very Nature of the Things perhaps will give a Credit to my Words, and you may ſoon ſee the whole Fabrick of the World ſhaken grievouſly by terrible Convulſions; but the commanding Power of Chance remove that Day far from us! And let Reaſon, rather than the Thing itſelf, convince us, that all Things diſſolved by the laſt dreadful Crack will fall to Ruin.

[c] But before I attempt to teach theſe Truths, more ſacred and much more worthy of Belief than what the *Pythoneſs* delivers from the Tripod and Laurel of *Apollo*, I ſhall firſt offer ſome Encouragements againſt your Fears, leſt, being under

[c] Many of the old Philoſophers, *Pythagoras*, *Plato*, *Triſmegiſtus* and others, believed the World to be endued with a rational Soul, and to partake of the Nature of the *God* that made it. They conſidered the admirable Order and Connection of all the Parts of the Univerſe, which they were perſuaded could not be ſuſtained but by a Soul intrinſically informing, ordering, diſpoſing and connecting them. The *Stoicks* went further, and held, that every one of the celeſtial Bodies that have Motion, were to be eſteemed in the Number of the *Gods*. They obſerved a Conſtancy in the Revolutions of the Heavens, and in the Courſes of the Stars; and therefore concluded their Motion to be voluntary, and conſequently that they are *Gods*.

the

Relligione refrænatus ne fortè rearis,
Terras, & Solem, Cælum, Mare, Sidera, Lunam,
Corpore divino debere æterna manere:
Propterea que putes ritu par eſſe Gigantum,
Pendere eos pœnas immani pro ſcelere omneis,
Qui ratione ſua diſturbent mœnia Mundi,
Præclarumque velint cœli reſtinguere Solem,
Immortalia mortali ſermone notantes.
Quæ procul uſqueadeo divino ab numine diſtent,
Inque deûm numero ſic ſunt indigna videri,
Notitiam potiùs præbere ut poſſe putentur,
Quid ſit vitali motu, ſenſuque remotum.
Quippe etenim non eſt cum quovis corpore ut eſſe
Poſſe Animi natura putetur, Conſiliumque.
Sicut in æthere non Arbor, nec in æquore ſalſo
Nubes eſſe queunt, neque Piſces vivere in arvis;
Nec Cruor in lignis, nec ſaxis Succus ineſſe:
Certum, ac diſpoſitum'ſt, ubi quicquid creſcat, & inſit.
Sic Animi natura nequit ſine Corpore oriri
Sola, neque à nervis, & ſanguine longiter eſſe.
Hoc ſi poſſet enim, multò priùs ipſa Animi vis
In Capite, aut Humeris, aut imis Calcibus eſſe
Poſſet, & innaſci quavis in parte ſoleret:
Tandem in eodem homine, atque in eodem vaſe maneret.
Quod quoniam noſtro quoque conſtat Corpore certum,
Diſpoſitumque videtur, ubi eſſe, & creſcere poſſit
Seorſum Anima, atque Animus: tantò magis infi-
ciandum,
Totum poſſe extra Corpus, formamque animalem
Putribus in glebis Terrarum, aut Solis in igni,

the Check of Religion, you ſhould by chance imagine that the Earth, the Sun, the Heavens, the Sea, the Stars, the Moon, being animated by a Spirit diffuſed throughout the Whole, were a Deity, and would remain for ever; and conſequently, that all thoſe deſerve juſtly the ſame Puniſhment as the Rebel Giants, for their Impiety, who by their Arguments would aſſault and break down the Walls of the World, and would extinguiſh the Sun (the bright Luminary of the Sky) and pronounce a Sentence of Diſſolution upon Things in their own Nature immortal.

The World not an Animal.

And yet theſe Things are ſo far from having any thing of Divinity about them, and ſo unworthy of being ranked in the Number of the *Gods*, that they may be thought rather to give us a Notion of ſomething as remote from Senſe and vital Motion as poſſible; for we are not to imagine that the Powers, Mind and Soul, can be united with all ſorts of Bodies. As there are no Trees in the Sky, no Clouds can be in the deep Sea; nor can Fiſh live in the Fields; nor can there be Blood in Wood, or Moiſture in Stones. There are certain and fixed Abodes, where all Things have a Being, and increaſe. The Soul therefore cannot come into Being alone, without the Body; nor can ſhe exiſt ſeparately, without the Nerves and the Blood. If this could be, the Powers of the Soul you would rather feel ſometimes in the Head or Shoulders, or even in the very Bottom of the Feet, or in any other Part of the Body, and ſo you would perceive it diffuſing itſelf through the whole Body: As Water poured into a Veſſel firſt covers one Part, and then ſpreads over the Whole. Since therefore there is a proper and determinate Place in the Body, for the Mind and Soul to be and increaſe in, we have the more Reaſon to deny that they can continue or be born without it, or that the Form of Life can reſide in rotten Clods of Earth, or in the Fire of the Sun, or in the Water,

Aut in Aqua durare, aut altis Ætheris oris.
Haud igitur conſtant divino prædita ſenſu,
Quandoquidem nequeunt vitaliter eſſe animata.
Illud item non eſt ut poſſis credere, ſedes
Eſſe Deûm ſanctas in mundi partibus ullis.
Tenuis enim natura Deûm, longèque remota
Senſibus à noſtris, animi vix mente videtur.
Quæ quoniam manuum tactum ſuffugit, & ictum,
Tactile nil nobis quod ſit, contingere debet.
Tangere enim non quit, quod tangi non licet ipſum.
Quare etiam ſedes quoque noſtris ſedibus eſſe
Diſſimiles debent, tenues de corpore eorum.
Quæ tibi poſteriùs largo ſermone probabo.
Dicere porro, Hominum cauſa voluiſſe parare
Præclaram mundi naturam, proptereaque
Id laudabile opus Divûm laudare decere,
Æternumque putare, atque immortale futurum,
Nec fas eſſe, Deûm quod ſit ratione vetuſta
Gentibus humanis fundatum perpetuo ævo.
Sollicitare ſuis ullum de ſedibus unquam,
Nec verbis vexare, & ab imo evertere ſummam:

Cætera

Water, or in the lofty Regions of the Sky. Theſe therefore are ſo far from being endued with a Divine Underſtanding, that they are incapable even of being animated with common Life.

Heaven not the Seat of the Gods.

Nor are you to believe that the [d] Sacred Manſions of the *Gods* are placed in any Parts of this World of ours; for the Nature of the *Gods* is ſo ſubtle, and at ſo remote a Diſtance from our Senſes, that it can ſcarce be apprehended by the Mind. Since therefore it cannot be touched or felt by our Hands, it can touch nothing that is the Object of our Senſes; for nothing has a Power to touch, that is incapable of being touched itſelf. For this Reaſon the Abodes of the *Gods* muſt be far different from ours; they muſt be ſubtle, and anſwerable to their own Nature. But the Truth of This I ſhall more fully prove in another Place.

The World not made for Man.

And then, [e] to ſay that the *Gods* deſigned this noble Fabrick of the World for the ſake of Man, and therefore we are to ſpeak honourably of this excellent Work, and conceive it to be eternal, and ſhall remain for ever; and that it is impious to prove, that this Frame of the World, contrived by the *Gods* to continue for ever for the Uſe of Man, ſhall fall to Ruin; or to offer to diſturb its Duration by Words and Arguments, and ſo overturn Things from their very Foundations.

[d] The Abode of the *Gods* is not in the Heavens; for the Nature of the *Gods* is too ſubtle to touch ſuch thick Bodies as the Heavens. Nor can their Abode be in any Part of the Univerſe; for whatever abides or is in any Place, both touches and is touched. But the *Gods*, by reaſon of the Subtilty of their Nature, can do neither.

[e] *Lucretius* impiouſly endeavours to raiſe a Duſt, and blind Men's Underſtandings; and to ſecure his former Opinion, pretends Objections, intermixt with Scoffs, againſt all thoſe who, upon ſober Principles, and a ſtrict Search into the Order and Diſpoſition of Things, were forced to confeſs this Frame to be the Contrivance of ſome intelligent Being, and the Product of Wiſdom itſelf.

Cætera de genere hoc adfingere, & addere, Memmi,
Deſipere'ſt; quid enim Immortalibus, atque Beatis
Gratia noſtra queat largirier emolumenti,
Ut noſtra quicquam cauſa gerere adgrediantur?
Quidve novi potuit tantò poſt antè quietos
Inlicere, ut cuperent vitam mutare priorem?
Nam gaudere novis rebus debere videtur,
Cui veteres obſunt; ſed, cui nil accidit ægri
Tempore in anteacto, cùm pulchrè degeret ævum,
Quid potuit novitatis amorem accendere tali?
An, credo, in tenebris vita, ac mærore jacebat,
Donec diluxit rerum genitalis origo?
Quidve mali fuerat nobis non eſſe creatis?
Natus enim debet, quicunque'ſt, velle manere
In vita donec retinebit blanda voluptas.
Qui nunquam verò vitæ guſtavit amorem,
Nec fuit in numero, quid obeſt non eſſe creatum?
Exemplum porro gignundis rebus, & ipſa
Notities Hominum, Divis unde inſita primùm?
Quid vellent facere ut ſcirent, animoque viderent?
Quove modo'ſt unquam vis cognita Principiorum,
Quidnam inter ſeſe permutato ordine poſſent,
Si non ipſa dedit ſpecimen Natura creandi?

Namque

tions. To pretend and enlarge upon This, and more ſuch Stuff, my *Memmius*, is all Madneſs; for what Advantage can any Acknowledgments of ours beſtow upon Divinities happy and immortal, that they ſhould give themſelves any Trouble upon our Account? or what new Pleaſure could prevail upon the *Gods*, who lived at Reſt for ſo many Ages before, to deſire to change their former State of Eaſe and Tranquility? Thoſe generally rejoice in a new Condition, who have been unhappy in the Laſt; but the Man who has felt no Misfortunes in his former State, but has lived pleaſantly and undiſturbed, what could excite the Love of Novelty in ſuch a One as this? Was the Life of the *Gods* ſpent in Darkneſs and Melancholy, till the Structure of the World ſhone out and cheared their Spirits? or what Evil had we ſuffered if we had never been created? Indeed, when we are once born, we ſhould ſtrive (whoever he be) to preſerve our Life, ſo long as we find an engaging Pleaſure in our Being; but he who never taſted the Love of Life, nor was inrolled among the Living, what Harm could he complain of if he had never been?

Bbsides, what Model had the *Gods* to work by, when they ſet about the Creation of the World? From whence had they any previous Knowledge of Man, to inform them, and give their Mind an Idea of what they propoſed to make? How could they come acquainted with the Powers and Force of the Atoms, and with what they were able to effect by the Change of their Site and Order, if Nature herſelf had not afforded them firſt a Specimen of Creation [f]? For the Seeds of Bodies were

[f] It was the Opinion of *Epicurus*, that the World was made by Nature, or rather by a fortuitous Concourſe of Atoms. They met without any Premeditation, and mutually cleaved to one another; and thus made all Compound Things, juſt as it happened, without any pre-conceived Deſign.

from

Namque ita multa modis multis Primordia rerum
Ex infinito jam tempore percita plagis,
Ponderibuſque ſuis conſuerunt concita ferri,
Omnimodiſque coire, atque omnia pertentare,
Quæcunque inter ſe poſſint congreſſa creare,
Ut non ſit mirum ſi in taleis diſpoſituras
Deciderunt quoque, & in taleis venere meatus,
Qualibus hæc rerum genitur nunc Summa novando.
Quòd ſi jam rerum ignorem Primordia quæ ſint,
Hoc tamen ex ipſis Cœli rationibus auſim
Confirmare, aliiſque ex rebus reddere multis,
Nequaquam nobis divinitus eſſe paratam
Naturam rerum, tanta ſtat prædita culpa.
Principiò, quantum Cœli tegit impetus ingens,
Inde avidam partem Monteis, Sylvæque ferarum
Poſſedere, tenent Rupes, vaſtæque Paludes,
Et Mare, quod latè Terrarum diſtinet oras.
Inde duas porro prope parteis fervidus Ardor,
Aſſiduuſque Geli caſus mortalibus aufert.
Quod ſupereſt arvi, tamen id Natura ſua vi
Sentibus obducat, ni vis Humana reſiſtat,
Vitaï cauſa valido conſueta bidenti
Ingemere, & terram preſſis proſcindere aratris.
Si non fœcundas vertentes vomere glebas,
Terraïque ſolum ſubigentes cimus ad ortus:
Sponte ſua nequeant liquidas exiſtere in auras.

Et

from all Eternity ſo variouſly agitated by Blows from without, and driven ſo about by their own Weight, and tryed every way to unite, and attempted all ſorts of Motion that might end at laſt in the Formation of Things; that no wonder they at laſt fell into ſuch Diſpoſitions, and ſo decent Order, as to produce the Univerſe, and continually preſerve and renew it.

For were I wholly ignorant of the Origin of Things, [g] yet I could prove this Truth from the Heavens, and by many other Reaſons, that the Frame of the World was by no means raiſed by the *Gods* for the Uſe of Man; ſo faulty it is, and contrived ſo ill. *The World not made by an intelligent Being.*

And firſt, The Earth, covered over by the violent Whirl of the Heavens; huge Mountains, and Woods, the Harbour of wild Beaſts; and Rocks, and vaſt Lakes; and the Sea, which widely ſeparates the diſtant Shores, take up a great Part of it; and then the torrid Heat, and continual Cold, rob Mankind almoſt of two Parts, and make them uninhabitable.

The fruitful Fields that remain, Nature of herſelf would ſpread over with Thorns, if the Labour of Man did not prevent it; if he did not, to preſerve Life, force the Earth by conſtant Toil with ſtrong Tools, and cut it through with the Plough; if we did not turn up the fruitful Clods with the crooked Share, and compel the Soil to exert its Strength, of its own accord it would produce nothing.

[g] He ſays, that the Work of an all-wiſe Artiſt ought to be perfect in all Points, not covered with Mountains, Woods and Lakes, dreadful to behold; not with ſome Parts chilled with perpetual Froſt, and others parched with continual Heat. It ſhould produce Fruits of all Sorts, rather than Thorns, Briers, *&c.* All Things ſhould be eaſy, beautiful, ſafe and pleaſant. It ſhould be a Work worthy of a wiſe and bounteous *God*.

Et tamen interdum magno quæſita labore,
Cùm jam per terras frondent, atque omnia florent;
Aut nimiis torret fervoribus ætherius Sol,
Aut ſubiti perimunt imbres, gelidæque pruinæ,
Flabraque ventorum violento turbine vexant.
Præterea genus horriferum Natura Ferarum,
Humanæ genti infeſtum, terraque marique,
Cur alit, atque auget? Cur Anni tempora morbos
Apportant? Quare Mors immatura vagatur?
Tum porro Puer, ut ſævis projectus ab undis
Navita, nudus humi jacet, infans, indigus omni
Vitali auxilio, cùm primùm in luminis oras
Nixibus ex alvo matris natura profudit:
Vagituque locum lugubri complet, ut æquum 'ſt,
Cui tantum in vita reſtet tranſire malorum.
At variæ creſcunt Pecudes, Armenta, Feræque:
Nec crepitacula eis opu' ſunt, ne cuiquam adhibenda 'ſt
Almæ nutricis blanda atque infracta loquela:
Nec varias quærunt Veſteis pro tempore Cæli.
Denique non Armis opus eſt, non Mœnibus altis,
Queis ſua tutentur, quando omnibus omnia largè
Tellus ipſa parit, naturaque dædala rerum.

Principiò,

And yet, when the Fruits are raiſed with great Labour, when they look green upon the Ground, and all Things flouriſh; either the Sun's Rays burn every thing up with their fierce Heat; or ſudden Showers, or piercing Froſts, deſtroy our Hopes; or the Blaſts of Wind, with terrible Hurricanes, blow them away.

And then, why does Nature nouriſh and increaſe the dreadful Race of wild Beaſts, by Sea and Land; the profeſſed Enemies to Human kind? Why do the Seaſons of the Year bring Diſeaſes with them? Why does untimely Death wander every way abroad?

Besides, [h] a Child, like a ſhipwreck'd Mariner caſt on Shore by the cruel Tide, lies naked upon the Ground; a wretched Infant, deſtitute of every Help of Life, as ſoon as Nature, by the Mother's Pangs, has thrown him from the Womb into Light; and then he fills the Air with mournful Cries, as he has Reaſon to do, ſince in the Courſe of Life he has ſuch a Series of Evils to paſs through. But Cattle of every kind, and Herds, and wild Beaſts, grow up with Eaſe: They have no need of Rattles to divert them; they have no Occaſion for the kind Nurſe, by her fond and broken Words, to keep them in Humour; they require no Difference of Dreſs for the ſeveral Seaſons of the Year; they have no need of Arms, nor high Walls, to ſecure their Property; for the Earth, with curious Contrivance, of herſelf produces every thing in Abundance, for the whole Variety of Creatures, to feed and ſupport them.

[h] If the *Gods* (ſays he) had made the World, the Condition of Man would have been better than that of other Animals, yet we plainly ſee it is much worſe; and to weigh Things rightly, Nature ſeems a kind Parent to them, and a croſs Step-mother to us.

Principiò, quoniam Terraï corpus, & Humor,
Aurarumque leves animæ, calidique Vapores,
E quibus hæc rerum conſiſtere Summa videtur,
Omnia nativo ac mortali corpore conſtant:
Debet tota eadem Mundi natura putari.
Quippe etenim quorum parteis, & membra videmus
Corpore nativo & mortalibus eſſe figuris;
Hæc eadem ferme mortalia cernimus eſſe,
Et nativa ſimul. Quapropter maxima Mundi
Cùm videam membra, ac parteis conſumta regigni.
Scire licet, Cœli quoque idem Terræque fuiſſe
Principiale aliquod tempus, clademque futuram.
Illud in his rebus ne me arripuiſſe rearis,
Memmi, quòd Terram, atque ignem mortalia ſumpſi
Eſſe: neque Humorem dubitavi, Auraſque perire:
Atque eadem gigni, rurſuſque augeſcere dixi:
Principiò, pars Terraï nonnulla peruſta
Solibus aſſiduis, multa pulſata pedum vi
Pulveris exhalat nebulam, nubeiſque volantes,
Quas validi toto diſpergunt aëre venti:
Pars etiam glebarum ad diluviem revocatur
Imbribus, & ripas radentia flumina rodunt.
Præterea, pro parte ſua quodcunque alid auget,
Roditur: & quoniam dubio procul eſſe videtur
Omniparens, eadem rerum commune ſepulcrum:

AND further, [i] Since the Body of the Earth, the Water, the light Breath of the Air, and the hot Fire, of which this Univerſe of Things conſiſts, had all a Beginning, and are all formed of mortal Seeds, the Nature of the World muſt be the ſame, and muſt die likewiſe. For a Body, whoſe Parts and Members we know were born, and were produced from mortal Principles, that Being muſt be the ſame in Nature with its Parts; it muſt have a Beginning, and be equally Mortal. And therefore when I obſerve the Four Elements (the great Limbs of the World) are continually changing, are waſted away, and then renewed; I conclude, that the whole World, the Earth and the Heavens, had a Time of beginning, and will in Time fall and be deſtroyed. *The Elements changeable.*

BUT, my *Memmius*, that you may not think I raſhly ſuppoſed what I ſhould have proved upon this Subject, when I ſaid that the Earth and the Fire were mortal, and made no doubt but the Air and the Water were ſo too, and that they began to be, and by degrees increaſed; you are to obſerve, firſt, that ſome Part of the Earth is burnt up by the continual Strokes of the Sun; and much of it, being worn by the continual Treading of the Feet, riſes into flying Clouds of Duſt, which the fierce Winds ſcatter through all the Air; and Part of the Earth, by ſoaking Showers, is turned into Water, and the incroaching Rivers eat away their Banks. Beſides, whatever increaſes another Body with any of its Parts, muſt loſe ſo much from itſelf: And ſince the Earth is certainly the great Parent and common Sepulchre of all Things,

[i] The Nature of the Whole is the ſame with that of its Parts; and ſince the Parts of the World, the Earth, Sea, Air and Fire, are continually changed, ſometimes diminiſhed, ſometimes renewed, it muſt be own'd that the whole Maſs is equally and alike Mortal.

Ergo Terra tibi limatur, & aucta recreſcit.
Quod ſupereſt, Humore novo mare, flumina, fonteis
Semper abundare, & latices manare perenneis,
Nil opus eſt verbis, magnus decurſus aquarum
Undique declarat: ſed primum quicquid Aquaï
Tollitur, in ſummaque fit, ut nihil Humor abundet,
Partim quòd validi verrentes æquora venti
Deminuunt, radiiſque retexens ætherius Sol:
Partim quòd ſubter per terras diditur omneis.
Percolatur enim virus, retroque remanat
Materies Humoris, & ad caput amnibus omnis
Convenit; inde ſuper terras fluit agmine dulci,
Qua via ſecta ſemel liquido pede detulit undas.
Aëra nunc igitur dicam qui corpore toto
Innumerabiliter privas mutatur in horas.
Semper enim quodcunque fluit de rebus, id omne
Aëris in magnum fertur mare: qui niſi contrà
Corpora retribuat rebus, recreetque fluenteis,
Omnia jam reſoluta forent, & in Aëra verſa.
Haud igitur ceſſat gigni de rebus, & in res

it muſt ſometimes be diminiſhed, and then increaſe and be renewed again.

And then, the Sea, the Rivers, the Fountains, abound always with ſweet Water, and flow with everlaſting Streams. There is no need of many Words; the prodigious Currents that flow every way into the Sea, prove This effectually. But leſt the Maſs of Waters ſhould grow too great, ſome of it is continually lick'd up, and waſtes away; the ſtrong Winds, bruſhing over its Surface, take off part of its Floud; and a Part the Sun exhales and draws up into the Air, and ſome is divided through the ſubterraneous Paſſages of the Earth: There the ſaline Particles are ſtrained off; and then the Waters flow back, and ſtart up in Fountains, and form themſelves into Rivers, which glide ſweetly with their collected Strength over the Earth, through thoſe Channels where the Streams firſt made their liquid Way.

And now, to ſpeak of the Air [k], which is changed with its whole Body every Moment, in various Manners not to be numbered; for whatever is continually flowing off from Bodies, is carried into the vaſt Ocean of the Air; unleſs the Air therefore reſtored again thoſe Particles to the Bodies from whence they came, and renewed them as they waſted away, all Things had long ſince been changed into Air, and wholly diſſolved. The Air therefore is continually produced from

[k] The Air is changed as well as the Earth and Water, which is proved before. Whatever flows from Bodies is carried into the vaſt Tract of Air; but minute Corpuſcles are continually flowing from all Things, and are conveyed into the Air, where they fly to and fro without waſting. Now unleſs the Air conſtantly reſtored thoſe Corpuſcles to the Bodies from whence they came, all Things by this time would have been waſted to nothing, and totally deſtroyed; therefore Bodies are perpetually changed into Air, and the Air returns again into Bodies.

Recidere aſſiduè, quoniam fluere omnia conſtat.
Largus item liquidi fons luminis, ætherius Sol
Inrigat aſſiduè cœlum candore recenti,
Suppeditatque novo confeſtim lumine lumen.
Nam primum quicquid fulgoris diſperit eij,
Quòcunque accidit: id licet hinc cognoſcere poſſis,
Quòd ſimul ac primùm nubes ſuccedere Soli
Cœpere, & radios inter quaſi rumpere lucis,
Extemplo inferior pars horum diſperit omnis;
Terraque inumbratur, qua nimbi cunque feruntur,
Ut noſcas ſplendore novo res ſemper egere,
Et primum jactum fulgoris quemque perire;
Nec ratione alia res poſſe in ſole videri,
Perpetuò ni ſuppeditet lucis caput ipſum.
Quin etiam nocturna tibi, terreſtria quæ ſunt,
Lumina, pendentes Lychni, claræque coruſcis
Fulguribus, pingues multa caligine Tedæ,
Conſimili properant ratione, ardore miniſtro,
Suppeditare novum lumen, tremere ignibus inſtant;
Inſtant, nec loca lux inter quaſi rupta relinquit:
Uſqueadeo properanter ab omnibus ignibus ejus
Exitium celeri toleratur origine flammæ.
Sic igitur, Solem, Lunam, Stellaſque putandum
Ex alio, atque alio lucem jactare ſubortu,
Et primum quicquid flammaï perdere ſemper:

Bodies, and continually returns into them again; for Things never remain the ſame, but are in a perpetual Fluctuation.

THE [1] Sun likewiſe, that large Fountain of liquid Light, conſtantly bedews the Heavens with a new Brightneſs, and inſtantly ſupplies one Ray by the Succeſſion of another; its firſt Beams of Light, as ſoon as they have ſhone out die away. This you may collect from hence, that as ſoon as a Cloud interpoſes between the Sun's Orb and Us, and as it were breaks through the Rays of Light, the lower Part of the Beams immediately periſhes, and the Earth, as the Clouds paſs over it, is made dark. This proves that Things require a conſtant Stream of new Rays, and that every firſt Emiſſion of Light dies; nor could Things otherwiſe be ſeen in the Light, unleſs the Sun (the Fountain of Brightneſs) continually ſent out freſh Supplies.

AFTER the ſame manner our nightly Lights that we uſe here below, our hanging Luſtres, our Lamps ſhining with a bright Flame, and fat with oily Smoke, are continually ſending out new Streams of Light by the Help of Fire. They preſs on and diſcharge their trembling Rays without Intermiſſion; they never ceaſe, nor is the Light ever interrupted, or leaves the Place dark for a Moment; ſo ſwiftly is the Deſtruction of the firſt Rays repaired from the conſtant Fire of the Lamps (the Fountains of Light) and a new Beam inſtantly flies off as the old expires. We conclude therefore that the Sun, the Moon and Stars, are continually throwing off new Supplies of Light, and that the firſt Rays they emit periſh and die away;

[1] He proves that Fire periſhes, and is again renewed, by inſtancing the Sun, whoſe firſt Light totally periſhes, and a new Light is created in its Place. This we experience when any Miſt interpoſes between the Sun's Orb and Us.

leſt

Inviolabilia hæc ne credas fortè vigere.
Denique non Lapides quoq; vinci cernis ab ævo?
Non altas Turreis ruere, & putreſcere Saxa?
Non delubra Deûm, Simulacraque feſſa fatiſci?
Nec ſanctum numen fati protollere fineis
Poſſe? Neque adverſus naturæ fœdera niti?
Denique non Monumenta virûm dilapſa videmus
Cedere proporro, ſubitoque ſeneſcere caſu?
Non ruere avolſos Silices à montibus altis,
Nec validas ævi vireis perferre, patique
Finiti? Neque enim caderent avolſa repente,
Ex infinito quæ tempore pertoleraſſent
Omnia tormenta ætatis privata fragore.
Denique jam tuere Hoc circum, ſupraque, quod omnem
Continet amplexu terram; quod procreat ex ſe
Omnia (quod quidam memorant) recipitque peremta:
Totum nativum mortali corpore conſtat.
Nam quodcunque alias ex ſe res auget, alitque,
Deminui debet, recreari cùm recipit res.

Præterea,

leſt you ſhould believe theſe Beams remained perfect and undiſſolved, and were eternally the ſame.

BESIDES, don't we obſerve how Stones are worn away by Time? that lofty Towers fall to Ruin, and Rocks moulder to Duſt? that the Temples and Images of the *Gods* are tired with ſtanding, and are forced to give way? [m] Nor can the *Gods* themſelves extend the Bounds of Fate, or ſtrive againſt the Laws of Nature. Don't you ſee the Monuments of Men burſt aſunder at laſt, to grow old, and ſuddenly break in Pieces? that the Rocks are torn, and tumble from the high Mountains, and are unable to bear or reſiſt the mighty Force even of a finite Time? for they would never have fallen with this ſudden Ruin, had they from all Eternity endured the Strokes of Time ſecure and unſhaken.

AND then, [n] look up to thoſe ſurrounding Heavens, that above and below embrace this Body of the Earth; thoſe Heavens which, ſome ſay, produce all Things out of themſelves, and to which all Things are at laſt reſolved. They ſurely had a Beginning, are formed of mortal Seeds, and muſt have an End; for whatever feeds and contributes to the Increaſe of other Bodies, muſt loſe ſome of its Parts, and muſt again be repaired by thoſe Bodies when they are diſſolved.

[m] Some imagine that it was the Opinion of the Ancients, that not only Man, and all created Things, as well animate as inanimate Beings, but that even the *Gods* themſelves, were ſubject to Fate. They held Fate to be unalterable and unavoidable; but in ſuch a manner neverthelcſs they believed, though it could not be wholly prevented, it might however be ſomewhat retarded.

[n] He confutes thoſe who held that all Things proceed from *Æther*, or Heaven, and are reſolved again into Heaven, and yet aſſert that Heaven itſelf is Immortal and Eternal; for whatever is changed into other Things, and is repaired and renewed by thoſe Things when they are reſolved, muſt be Born and Mortal.

FURTHER,

Præterea, ſi nulla fuit genitalis origo
Terraï & Cœli, ſemperque æterna fuere:
Cur ſupera bellum Thebanum, & funera Trojæ,
Non alias alii quoque res cecidere Poëtæ?
Quò tot facta virûm toties cecinere? Nec uſquam
Æternis famæ monumentis inſita florent?
Verùm (ut opinor) habet novitatem Summa, recenſque
Natura'ſt Mundi, neque pridem exordia cepit.
Quare etiam quædam nunc Artes expoliuntur,
Nunc etiam augeſcunt; nunc addita Navigiis ſunt
Multa: Modò Organici melicos peperere ſonores.
Denique Natura hæc rerum, Ratioque reperta'ſt
Nuper, & hanc Primus cum primis Ipſe repertus
Nunc ego ſum, in patrias qui poſſim vertere voces.
Quòd ſi forte fuiſſe antehac eadem omnia credis;

FURTHER, If the Heavens and the Earth had no Beginning, but were from Eternity the ſame, how comes it that no [o] Poets have ſung of any great Events beyond the *Theban* War and the Deſtruction of *Troy?* How came the Exploits of ſo many Heroes to be buried in Oblivion? that none of their great Actions are recorded in the eternal Monuments of Fame, to live for ever? For no other Reaſon, I conceive, but that the Univerſe is of a late Creation, that the Subſtance of the World is New, and began not long ago. And therefore ſome Arts are but lately known, others are poliſhed and refined, many new Diſcoveries are made in Navigation, and the Maſters of Muſick have but now brought Sound and Harmony to Perfection; and, in the laſt place, This very *Nature of Things*, which I now write of, and the Reaſons of them, are but lately found out, and I call myſelf One of the Firſt who have attempted to convey them to Poſterity in *Latin* Verſe.

BUT [p] if you ſhould think that theſe Things

[o] He aſſerts the World muſt be New, becauſe the moſt ancient of all Hiſtory reach no farther than the *Theban* or *Trojan* Wars; and certainly if the World, far from being Eternal, were much older than we know it to be, we ſhould have had Records of a much older Date: And farther, becauſe all the Arts are but of late Invention, ſince Mention is made of the Founders of all of them; and if the World had had no Beginning, all Arts, eſpecially thoſe uſeful to Life, would have exiſted from all Time.

[p] To theſe Arguments it is ſaid, that the ſame Arts flouriſhed heretofore that do now; but ſometimes Fire deſtroyed Mankind, ſometimes Deluges ſwept them away, or Earthquakes ſwallowed them up; and hence it is that thoſe Arts ſeem to be New. *Lucretius* retorts this Anſwer by obſerving, that no Man of ſound Judgment will pretend that this World, whoſe Parts are ſometimes conſumed by Fire, ſometimes overwhelmed with Waters, and ſometimes ſhaken and ſwallowed up by Earthquakes, can be Eternal: For the Occaſion why we believe a Man to be Mortal is, becauſe he is ſubject to and attacked by thoſe Diſeaſes, which having ſeized upon others with greater Violence, have ſwept them away.

were

Sed periiſſe hominum torrenti ſæcla vapore,
Aut cecidiſſe urbeis magno vexamine Mundi,
Aut ex imbribus aſſiduis exîſſe rapaceis
Per terras Amneis, atque oppida cooperuiſſe:
Tantò quippe magis victus fateare neceſſe'ſt,
Exitium quoque Terraï, Cœlique futurum.
Nam cùm res tantis morbis tantiſque periclis
Tentarentur, ibi ſi triſtior incubuiſſet
Cauſa; darent latè cladem, magnaſque ruinas:
Nec ratione alia mortales eſſe videmur
Inter nos, niſi quòd morbis ægriſcimus îſdem,
Atque illi, quos à vita natura removit.

Præterea, quæcunque manent æterna, neceſſe'ſt,
Aut quia ſunt ſolido cum corpore, reſpuere ictus,
Nec penetrare pati ſibi quicquam, quod queat arctas
Diſſociare intus parteis, ut Materiaï
Corpora ſunt, quorum naturam oſtendimus antè:
Aut ideo durare ætatem poſſe per omnem,
Plagarum quia ſunt expertia, ſicut Inane'ſt,
Quod manet intactum, neq; ab ictu fungitur hilum:
Aut etiam, quia nulla loci ſit copia circùm,
Quò quaſi res poſſunt diſcedere, diſſolvique.
Sicut Summarum Summa'ſt æterna, neque extra
Quis locus eſt, quò diſſiliant: Neque corpora ſunt, quæ
Poſſint incidere, & valida diſſolvere plaga.
At neq; (uti docui) ſolido cum corpore Mundi
Natura'ſt, quoniam admiſtum'ſt in rebus Inane:
Nec tamen eſt ut Inane: neq; autem Corpora deſunt,
Ex Infinito quæ poſſint fortè coorta
Proruere hanc rerum violento turbine Summam,
Aut aliam quamvis cladem importare pericli.
Nec porro natura loci, ſpatiumque profundi

Deficit,

were long before the ſame they are now; but that Mankind were deſtroyed by the Rage of Fire, or Cities were overwhelmed by Earthquakes (the great Terrors of the World) or that the rapid Rivers, by continual Showers, overflowed the Earth, and covered whole Towns; you have ſtill the more Reaſon to be convinc'd, and to allow, that the Earth and the Heavens will at laſt be deſtroyed: For if Things were liable to feel ſo great Convulſions, and ſuffer ſo great Dangers, it is plain if the Cauſe of theſe Ruins had been more violent, they muſt have periſhed and been utterly diſſolved. Nor have we any other Rule to judge that we ourſelves are Mortal, and muſt die, but that we ſicken with the ſame Diſeaſes as thoſe endured, whom Death has removed from this Life.

BESIDES, whatever is Eternal muſt be ſo, either becauſe it conſiſts of ſolid Seeds, or it cannot be broken by Blows; nor will it ſuffer any thing to pierce it, to diſunite the cloſe Contexture of its Parts; of this ſort are the Seeds of Matter, whoſe Nature we have ſhewn before; or Things would remain for ever, becauſe they are out of the Power of Stroke, as a *Void* is, which is not to be touched, nor can be affected by Force; or becauſe there is no Extent of Space about them, into which their Parts may fall when they are diſſolved. For this Reaſon the Univerſe, or All, is Eternal: There is no Place beyond, where its ſcattered Seeds may retire; nor are there any Bodies to beat upon it, and by violent Blows break it to Pieces. But (as I ſaid) the Subſtance of the World is not formed altogether of ſolid Seeds, becauſe a *Void* is mixed with its Parts; nor is it wholly *Void*; nor are there wanting Bodies, riſing to ſtrike and overthrow with mighty Force this World, or to bring it into Danger of Ruin ſome other way; nor is there any Defect of Place or Space beyond, into which

Deficit, exſpergi quo poſſint mœnia Mundi,
Aut alia quavis poſſint vi pulſa perire.
Haud igitur lethi præcluſa'ſt janua Cœlo,
Nec Soli, Terræque, nec altis Æquoris undis:
Sed patet immani, & vaſto reſpectat hiatu.
Quare etiam Nativa neceſſum'ſt confiteare
Hæc eadem: neq; enim, mortali corpore quæ ſunt,
Ex infinito jam tempore adhuc potuiſſent
Immenſi validas ævi contemnere vireis.
Denique tantopere inter ſe cùm maxima Mundi
Pugnent membra, pio nequaquam concita bello;
Nonne vides aliquam longi certaminis ollis
Poſſe dari finem? Vel cùm Sol, & Vapor omnis
Omnibus epotis humoribus exſuperârint,
Quod facere intendunt, neque adhuc conata patrantur:
Tantum ſuppeditant Amnes, ultròque minantur
Omnia diluviare ex alto gurgite ponti;
Nequicquam: Quoniam verrentes æquora venti
Deminuunt, radiiſque retexens ætherius Sol;
Et ſiccare priùs confidunt omnia poſſe,
Quam liquor incœpti poſſit contingere finem.
Tantum ſpirantes æquo certamine bellum
Magnis de rebus inter ſe cernere certant:
Cùm ſemel in terra fuerit ſuperantior Ignis,
Et ſemel (ut fama'ſt) Humor regnârit in arvis.

which the Walls of the World may tumble down, or they may fall to Pieces by ſome other Force, and be diſſolved. The Gate of Death therefore is not barred againſt the Heavens, nor the Sun, nor the Earth, nor the deep Waters of the Sea; but ſtands open, with its wide and gaping Jaws, to receive them all. For theſe Reaſons it muſt needs be allowed, that theſe Things had a Beginning; for whatever is formed of mortal Seeds, and muſt die, could not from Eternity reſiſt the ſtrong Attacks of infinite paſt Time, and the Power of Age.

LASTLY, [q] Since the Elements (the firſt Principles of the World) are continually fighting, and carrying on an implacable War among themſelves; can there be no End, think you, of their long Conteſts? If the Sun, ſuppoſe, or the Fire, by ſucking up all the Moiſture ſhould get the better, which they ſtrive to do, but have not yet effected their Deſign; ſuch a Supply of Water do the Rivers pour in, and the Sea from its mighty Deeps rather threatens to drown the World: But in vain; the bruſhing Winds are continually licking up and leſſening its Tide; and the hot Sun, with its Rays, drinks up a Part; and Things ſeem rather to be in Danger of being dried up, than of periſhing by a Flood of Waters. With ſuch equal Succeſs is the War carried on, and their Powers are ſo diſputed with equal Force. Yet Time was when the Rage of Fire once prevailed over the World; and the Water (as they

[q] He brings another Argument from the continual Fighting of the Elements, which are the Four chief Parts of the World: For (ſays he) ſince Fire engages with Water, and ſometimes the Flame, ſometimes the Flood, prevails; what ſhould hinder but that this Contention will at laſt end in the Deſtruction of the whole World? And that great Conflagrations and Deluges have happened, the Stories of *Phaeton* and *Deucalion*, well known, do ſufficiently evince.

Ignis enim ſuperavit, & ambens multa peruſſit,
Avia cùm Phaëthonta rapax vix Solis equorum
Æthere raptavit toto, terraſque per omneis.
At pater Omnipotens ira tum percitus acri
Magnanimum Phaëthonta repenti fulminis ictu
Deturbavit equis in terram; Solque cadenti
Obvius æternam ſuccepit lampada mundi;
Disjectoſque redegit equos, junxitque trementeis:
Inde ſuum per iter recreavit cuncta gubernans.
Scilicet, ut veteres Graiûm cecinere Poetæ:
Quod procul à vera'ſt animi ratione repulſum.
Ignis enim ſuperare poteſt, ubi Materiaï
Ex infinito ſunt corpora plura coorta;
Inde cadunt vires aliqua ratione revictæ,
Aut pereunt res exuſtæ torrentibus auris:
Humor item quondam cœpit ſuperare coortus,
Ut fama'ſt hominum, multas quando obruit urbeis:
Inde ubi vis aliqua ratione averſa receſſit,
Ex Infinito fuerat quæcunque coorta,
Conſtiterunt Imbres, & Flumina vim minuerunt.
Sed quibus ille modis conjectus Materiaï

Fundârit

ſay) once got the Dominion, and drowned the Earth. The Fire had the Victory, and ſet every thing in a Flame, when the mad Fury of the Horſes of the Sun, flying out of their Courſe, dragged the wretched *Phaeton* through the whole Heavens, and over all the Regions of the World; but great *Jupiter*, in his fierce Rage, ſuddenly ſtruck the daring Youth with a Thunderbolt, and tumbled him headlong from his Horſes to the Earth: And *Phœbus* meeting him as he fell, gathered up the ſcatter'd Rays of the Sun (the great Luminary of the World) brought back the diſtracted Horſes, and harneſſed them trembling to the Chariot again; and driving them in the right Courſe, recovered Things to their proper Order. This Tale the *Grecian* Poets ſung of old, which is abſurd and againſt all Belief; [r] yet the Fire may get the maſtery, if the large Supplies of fiery Seeds are brought from the great Maſs of Matter into this World. The Rage of theſe Seeds muſt by ſome Force be weakened and ſuppreſſed, or Things by ſo ſcorching Heats muſt periſh and be burnt up. The Water likewiſe prevailed once (as they ſay) when it overthrew many Cities; but when the Seeds, that were ſupplied from the Maſs of Matter, were turned into ſome other Channel, the Rains ceaſed, and the Rivers flowed again within their Banks.

The World may be burnt.

But now [s] I ſhall explicate in Order, by what Chance the violent Agitation of Matter produced the

How the World began.

[r] It is poſſible that Fire may deſtroy all Things, if an immenſe Quantity of Corpuſcles, of a fiery Matter, were brought down upon the Earth out of the Infinite Space; for in that Caſe, unleſs the Power and Force of that igneous Matter be weakned, repreſſed and kept under, by ſome means or other, all Things will be burnt, and periſh with too much Heat.

[s] In explaining how the World began, he excludes the Divine Providence from being concerned in it, and aſcribes the Whole

Fundârit Cœlum ac Terram, Pontique profunda,
Soliſque & Lunæ curſus, ex ordine ponam.
Nam certè neque conſilio Primordia rerum
Ordine ſe quæque, atque ſagaci mente locârunt;
Nec quos quæque darent motus pepigere profecto:
Sed quia multa modis multis Primordia rerum
Ex infinito jam tempore percita plagis,
Ponderibuſque ſuis conſuerunt concita ferri,
Omnimodiſque coire, atque omnia pertentare,
Quæcunque inter ſe poſſent congreſſa creare;
Propterea fit, uti magnum volgata per ævum
Omnigenos cœtus, & motus experiundo,
Tandem ea conveniant, quæ ut convenêre repente
Magnarum rerum fiant exordia ſæpe,
Terraï, Maris, & Cœli, generiſque Animantum.
Hic neque tum Solis rota cerni lumine largo
Altivolans poterat, neque magni Sidera mundi,
Nec Mare, nec Cœlum, nec denique Terra, neque Aër,
Nec ſimilis noſtris rebus res ulla videri:
Sed nova tempeſtas quædam, moleſque coorta.
Diffugere inde loci partes cœpere, pareſque
Cum paribus jungi res, & diſcludere Mundum,
Membraque dividere, & magnas diſponere parteis
Omnigenis è Principiis, diſcordia quorum

Intervalla,

the Heavens, and the Earth, and the Deeps of the Sea, and the Courſes of the Sun and Moon; for ſurely the Principles of Things could never fall into ſo regular a Diſpoſition by Counſel or Deſign, nor could they by Agreement reſolve what Motions they ſhould take among themſelves. But the Seeds of Things, being from Eternity beaten upon by outward Blows, or uſed to be driven by the Force of their own Weight, met every way, tried all Motions that might at laſt, by their uniting, end in the Production of Things; and then having attempted for infinite Time all ſorts of Union, and moved every way about, thoſe Seeds at length met and united, and became the Principles of the great Productions that followed, of the Earth, the Sea, the Heavens, and the whole Animal Creation.

BUT as yet there was no Chariot of the Sun to be ſeen, driving with his large Stock of Light through the Sky; no Sea, no Heavens, no Air, nothing like any Beings of this World of ours, to be ſeen; but a ſtrange Confuſion, a Maſs of rude and undigeſted Seeds. From this Heap the various Parts retired to their proper Place, and Seeds of like Nature joined together and formed this World. Then were its mighty Parts divided, and diſpoſed in Order, though produced from this confuſed Maſs, and from Seeds of every kind; for the diſagreeing Powers of thoſe Seeds ſo di-

Whole to Matter; from whence proceeded *Chaos* (a rude and indigeſted Heap of Particles) which being driven to and fro, at length came together, like with like; and thence aroſe the Heaven, the Earth, *&c.* He obſerves, that ſo long as the Atoms were jumbled confuſedly one among another, neither Earth, nor Heaven, nor Stars, had yet a Being; but when the chief Parts of the World began to disjoin, and get clear from each other, then the Heaven ſhone with Splendor, the dry Ground appeared, the Waters were gathered into One, *&c.*

Intervalla, Vias, Connexus, Pondera, Plagas,
Concurſus, Motus turbabat, prælia miſcens,
Propter diſſimileis formas variaſque figuras ;
Quòd non omnia ſic poterant conjuncta manere,
Nec motus inter ſeſe dare convenienteis :
Hoc eſt à Terris altum ſecernere Cœlum,
Et ſeorſum Mare uti ſecreto humore pateret,
Seorſus item puri, ſecretique ætheris Ignes.
Quippe etenim primum Terraï corpore quæque,
Propterea quod erant gravia, & perplexa coibant,

In

ſturbed their ſeveral Courſes, Intervals, Conections, Weights, Strokes, Unions and Motions, and kept them ſo continually at War, that they could never all unite, nor agree upon any regular Motions among themſelves. Thus the Heavens ſeparated, and raiſed their Bodies on high above the Earth; and the Sea, with its vaſt Extent of collected Waters, retired apart; and the pure and bright Fires of the Sky flew upwards, and divided from the reſt.

AND firſt, [t] The Particles of the Earth, being heavy and entangled, met and ſunk downwards towards *How the Earth was made.*

[t] It was the Opinion of *Epicurus*, that the Atoms, being embroiled and confuſed in a Heap together, did by their innate Motion roul and tumble up and down among one another, till at length all the more denſe Atoms jumbled towards the Middle, and all the more Rare, being extruded and ſqueezed away by the Thicker, flew towards the Circumference: That of theſe thicker Atoms the Body of the Earth was compacted, and that it contained within its Bulk ſome Seeds of Water, which had not been able to diſentangle themſelves and get away at the ſame time with the others; but that ſome of thoſe that had diſentangled themſelves, did by reaſon of their various Degrees of Tenuity retire to ſeveral Diſtances; thus ſome of them ſtopt not far from the Maſs of Earth, and made the Air; that others mounted yet more aloft, and compoſed the Sky; and that the fiery Corpuſcles that were extruded with the reſt, getting clear of all of them, combined into thoſe Bodies that ſhine in the Sky, and are called *Stars:* Laſtly, That the leſſer, round, ſmooth Corpuſcles, were ſo determined, limited, and confined to that Motion towards the Circumference that was made by *Eliſion* (or, by Expreſſion, from the more denſe Corpuſcles) that foraſmuch as they went not out of the Maſs by parallel Ways, they did in the very Progreſſion variouſly encounter one another, and mutually repelled the Violence they received; which Violence at length ceaſing, thoſe that were got fartheſt or moſt remote from the Center, became entangled one with another, and mutually compreſſing each other, and holding faſt together, did by that means create a certain Species of the Walls of the World; and whatever Corpuſcles came to them there, were turned back und repreſſed from them in ſuch a manner, that ſtill new Supplies coming up, the whole etherial or celeſtial Region

In medioque imas capiebant omnia ſedes:
Quæ quantò magis inter ſe perplexa coibant,
Iam magis expreſſere ea, quæ Mare, Sidera, Solem,
Lunamque efficerent, & magni mœnia Mundi.
Omnia enim magis hæc è lævibus atque rotundis
Seminibus, multòque minoribu' ſunt Elementis,
Quàm Tellus: ideo per rara foramina terræ
Partibus erumpens primus ſe ſuſtulit Æther
Signifer, & multos ſecum levis abſtulit Igneis:
Non alia longè ratione, ac ſæpe videmus,
Aurea cùm primùm gemmanteis rore per herbas
Matutina rubent radiati lumina Solis,
Exhalantque Lacus nebulam, Fluviique perennes:
Ipſa quoque interdum Tellus fumare videtur:
Omnia quæ ſurſum cùm conciliantur in alto,
Corpore concreto ſubtexunt nubila Cœlum:
Sic igitur tum ſe levis, ac diffuſilis Æther
Corpore concreto circumdatus undique ſepſit,
Et latè diffuſus in omneis undique parteis,
Omnia ſic avido complexu cætera ſepſit.
Hunc exordia ſunt Solis Lunæque ſecuta:
Inter utroſque globi quorum vertuntur in auris:

towards the middle Place of the Maſs; and the more cloſely twined the Parts of it were, the more they ſqueezed out thoſe Seeds that compoſed the Sea, the Stars, the Sun; and that formed the Moon, and the Heavens (the Walls of this great World): For Theſe conſiſt of Seeds much more ſmooth and round, and of much leſs Principles than the Earth; and therefore the Heavens (the Abode of the Stars) firſt got free through the ſubtle Pores of the Earth, and aſcended upwards; and being light, drew many Seeds of Fire along with them; much in the ſame manner with what we frequently obſerve, when the golden Rays of the bright Morning Sun firſt ſhine upon the Graſs decked with pearly Dew, and the ſtanding Lakes and running Rivers exhale a Miſt into the Air, and the Earth ſometimes ſeems to ſmoke. Theſe Vapours, when they are raiſed upwards and united, become Clouds, and with their condenſed Bodies darken the whole Sky; and ſo the light and ſpreading *Æther*, being condenſed, ſtretches widely over every Place; and being diffuſed on all Sides abroad, embraces every thing with its large Circumference, and incloſes it about.

The Formation of the Heavens.

THE Beginnings of the [u] Sun and Moon follow next, whoſe Orbs are rolled in the Air between

gion was aptly made and fabricated by them. This is done (as *Lucretius* obſerves) in the ſame manner as when Vapours and Exhalations ſteam out of the Earth and Water; and being carried aloft, are there condenſed and grow into one Body of Clouds, ſo as to make as it were a Ceiling, under which the Air that remains viſible to us is contained.

[u] Having made the Earth as the Foundation of the World, and the Sky the Walls of it (as he calls it) he now places the Sun and Moon, which are of a middle Nature, between the Sky and the Air (as being compoſed of Principles lighter than thoſe of the Air, and heavier than thoſe of the Sky) in the very Confines of the Air and Sky; where (he tells us) they are in perpetual Motion, as the Lungs and Heart in Animals.

the

Quæ neque Terra ſibi adſcivit neque maximus Æther:
Quod nec tam fuerint gravia, ut depreſſa ſederent:
Nec levia, ut poſſent per ſummas labier oras:
Et tamen inter utroſque ita ſunt, ut corpora viva
Verſent, & partes ut Mundi totius extent.
Quod genus in nobis quædam licet in ſtatione
Membra manere, tamen cum ſint ea quæ moveantur.
His igitur rebus retractis, Terra repente,
Maxima, quà nunc ſe Ponti plaga cærula tendit,
Succidit, & ſalſo ſuffudit gurgite foſſas:
Inque dies quantò circum magis Ætheris æſtus,
Et radii Solis cogebant undique Terram,
Verberibus crebris extrema ad limina apertam,
In medio ut propulſa ſuo condenſa coiret:
Tam magis expreſſus ſalſus de corpore Sudor
Augebat Mare manando, campoſque natanteis:
Et tantò magis illa foras elapſa volabant
Corpora multa Vaporis, & Aëris, altaque Cœli
Denſebant procul à terris fulgentia templa:
Sidebant Campi, creſcebant Montibus altis
Aſcenſus: neque enim poterant ſubſidere Saxa,
Nec pariter tantundem omnes ſuccumbere partes.
Sic igitur Terræ concreto corpore pondus

Conſtitit,

the *Æther* and the Earth, and whoſe Principles would unite neither with thoſe of the Earth nor the Sky; they had not Weight enough to ſink ſo low as the one, nor were they ſufficiently light to riſe ſo high as the other; yet they are ſo placed between both, that they conſtantly turn about their Bodies, and ſo become Parts of the whole World. As in theſe Bodies of Ours, ſome Members are continually at Reſt, when others are always in Motion.

THESE Things being ſeparated, [x] a great Part of the Earth ſunk ſuddenly, and made a Channel where the Tides of the Sea now flow, and formed a Cavern for the ſalt Waters: And the more the Heat of the Sky, and the Beams of the Sun, preſſed every way with frequent Strokes upon the Earth, full of Pores on the Outſide (that ſo its Particles, being driven towards the Middle, might be more firm and condenſed) the more the ſalt Water like Sweat was ſqueezed out, and by flowing inlarged the Surface of the Sea, and ſpread wider abroad; and the more the many Corpuſcles of Fire and Air diſentangled themſelves, and flew off from the Earth, and formed themſelves above, at a great Diſtance, into the ſhining Frame of the Heavens. The Valleys ſubſided, the Mountains raiſed their lofty Heads; nor could the Rocks ſink down, nor all Parts of the Earth fall equally low. And thus the Weight of the Earth, with its

[x] That feculent Maſs that ſunk together to the Bottom, being preſſed on all Sides by the Beams of the Sun and the Heat of the Sky, contracted itſelf; thence exhaled the Sea like Sweat; but the lighter Particles mounting higher, compoſed the Elements of Fire and Air; and ſome of the Particles of this Maſs, being more hard and ſtiff than the others, they did not all ſubſide alike; and hence came the hollow Places to receive the Sea, and the Channels for the Rivers; and hence too the Level of the Plains, and the Turgidneſs of the Mountains.

heavy

Conſtitit, atque omnis Mundi quaſi Limus in imum
Confluxit gravis, & ſubſedit funditus, ut Fæx.
  Inde Mare, inde Aër, inde Æther ignifer ipſe.
Corporibus liquidis ſunt omnia pura relicta;
Et leviora aliis alia: & liquidiſſimus Æther,
Atque leviſſimus Aërias ſuper influit auras;
Nec liquidum corpus turbantibus Aëris auris
Commiſcet: ſinit hæc violentis omnia verti
Turbinibus: ſinit incertis turbare procellis:
Ipſe ſuos Igneis certo fert impete labens.
Nam modicè fluere, atque uno poſſe Æthera niſu,
Significat Ponti Mare, certo quod fluit æſtu,
Unum labendi conſervans uſque tenorem.
  Motibus Aſtrorum nunc quæ ſit cauſa, canamus.
Principiò, magnus Cœli ſi vertitur orbis:
Ex utraque Polum parti premere Aëra nobis
Dicendum'ſt, extraque tenere, & claudere utrinque;
Inde Alium ſupera fluere, atque intendere eôdem,

heavy Body, ſtood firm; and its whole Maſs, like thick Mud, fell to the Bottom, and ſunk the loweſt, as the Dregs of all.

AND thus were produced the Sea, the Air, and the [y] Sky (or the *Æther)* ſpangled with Stars. All the finer Seeds went to the Formation of theſe fluid Bodies, but ſome were more light than others; and the moſt light and liquid *Æther* mounted higher, and ſpread over the Body of the Air; but its liquid Parts never mix with the turbulent Blaſts of the Air below it. The airy Region is tormented by violent Whirlwinds, and diſturbed by uncertain Storms; while the *Æther* calmly glides, and bears along its Fires in a fixed Courſe; and that the *Æther* may flow thus gently, and in a regular Motion, we have an Inſtance in the *Euxine* Sea, that runs with one certain Tide, and preſerves one conſtant Stream in the Current of its Waters.

Why the Stars move.

NOW let us ſhew from what Cauſe proceeds [z] the Motion of the Stars: And firſt, If the whole Orb of the Heavens be moved, then we muſt allow, that the Air bounds and incloſes the outward Surface of the Heavens, and both the Poles; the upper Part of this Air preſſes above, and drives the Skies down to the Weſt, the Courſe in which

[y] The reſplendent and liquid *Æther*, having mounted higher than the inconſtant and turbulent Air, is wholly undiſturbed by Storms, and rolls in a conſtant and like Motion; which Motion of the *Æther* is not in the leaſt incredible, ſince the *Euxine* Sea does the like, and is continually flowing into the *Propontick*, without changing its Courſe.

[z] If the whole Orb be moved, then there may be two Airs; one that may preſs from above, and drive it down to the Weſt, and another that may be ſaid to bear and lift it up from beneath. If the Orb be without Motion, then ſome rapid Particles of the Sky, ſtruggling to get into the empty Space, and not able to force their way and break through the ſtrong Walls of the World, are whirled about, and drag the Stars with them, &c.

Quo volvenda micant æterni Sidera mundi:
Aſt Alium ſubter, contrà qui ſubvehat Orbem:
Ut fluvios verſare Rotas, atque Hauſtra videmus.
Eſt etiam quoque, uti poſſit Cælum omne manere
In ſtatione, tamen cùm lucida ſigna ferantur:
Sive quod incluſi rapidi ſunt Ætheris æſtus,
Quærenteſque viam circumverſantur, & Ignes
Paſſim per Cæli volvunt ſe immania templa:
Sive aliunde fluens alicunde extrinſecus Aër
Verſat agens igneis: ſive Ipſi ſerpere poſſunt,
Quo cujuſque cibus vocat, atque invitat eunteis;
Flammea per cælum paſcenteis corpora paſſim.
Nam quid in hoc Mundo ſit eorum, ponere certum
Difficile'ſt: ſed quid poſſit, fiatque per Omne
In variis Mundis varia ratione creatis,
Id doceo: plureiſque ſequor diſponere cauſas
Motibus aſtrorum, quæ poſſint eſſe per Omne.
E quibus una tamen ſit & hæc quoque cauſa neceſſe'ſt,
Quæ vegeat motum ſignis: ſed quæ ſit earum
Præcipere, haud quaquam'ſt pedetentim progredientis,
Terraq; ut in media Mundi regione quieſcat,
Evaneſcere paullatim, & decreſcere pondus
Convenit: atque aliam naturam ſubter habere
Ex ineunte ævo conjunctam, atque uniter aptam
Partibus Aëriis Mundi, quibus inſita ſidit.

the Stars (the great Lights of the World) are to move; the under Part flows below, and lifts up this Orb from beneath, and makes it riſe, as we ſee the Wheels of a Mill, or Buckets, are turned about by a running Stream.

OR perhaps the whole Body of the Heavens may remain fixed, and yet the Stars may execute their Motions; either becauſe ſome rapid Particles of the Sky are ſhut up, and ſtruggling to find a Way into the empty Space, are whirled about, and drag the Stars along with them; or ſome external Air, ruſhing in from ſome other Place, may turn them about; or they may move ſeverally forward of themſelves through the Sky, where proper Nouriſhment invites them to feed and keep alive their Fires. But it is hard to reſolve for certain, what is the particular Cauſe of theſe Motions in this World of ours. I rather propoſe Reaſons in general for what may be done through the Univerſe, in the Multitude of Worlds contained in the Great *All*, and formed after various Manners; and I offer many Cauſes that may account for the Whole, yet One only can be the True One that produced theſe Effects; but to pronounce which it is, no wary Philoſopher will take upon him to do.

Why the Earth doth not fall.

BUT that the Earth ſhould reſt in the middle Region of the World, it is neceſſary that its Weight ſhould in ſome Degree leſſen and be laid aſide; and for this End it was fit that another Subſtance ſhould be placed under it, to which from the very Beginning it ſhould be united cloſely by natural and [a] congeneal Ties, and upon which it ſhould

[a] Though the Air only is circumfuſed around the Earth, yet becauſe both Air and Earth are bound by natural and kindred Ties, and from their very Beginning are Parts of the ſame Whole, the Earth is no Burden to the Air; but having in a manner laid aſide all its Weight and Compreſſion, it only ſticks faſt and cleaves naturally to it.

Propterea non eſt oneri, neque deprimit auras:
Et ſua cuique Homini nullo ſunt pondere Membra:
Nec Caput eſt oneri Collo, nec denique totum
Corporis in Pedibus pondus ſentimus ineſſe.
At quæcunque foris veniunt impôſtaque nobis
Pondera ſunt, lædunt permultò ſæpe minora:
Uſqueadeo magni refert, cui quæ adjaceat res.
Sic igitur Tellus non eſt aliena repente
Adlata, atque auris aliunde objecta alienis:
Sed pariter prima concepta ab origine Mundi:
Certaque pars ejus, quaſi nobis Membra videtur.
Præterea grandi tonitru concuſſa repente
Terra, ſupra ſe quæ ſunt, concutit omnia motu:
Quod facere haud ulla poſſet ratione, niſi eſſet
Partibus aëriis mundi, cæloque revincta.
Nam communibus inter ſe radicibus hærent
Ex ineunte ævo conjuncta, atque uniter apta.
Nonne vides etiam, quàm magno pondere nobis
Suſtineat corpus tenuiſſima vis Animaï,
Propterea quia tam conjuncta, atque uniter apta'ſt?
Denique jam ſaltu pernici tollere Corpus
Quis potis eſt, niſi vis Animæ, quæ membra gubernat?
Jamne vides quantùm tenuis natura valere
Poſſit, ubi eſt conjuncta gravi cum corpore, ut Aër
Conjunctus terris, & nobis eſt Animi vis?

Nec

ſhould be ſtaid. This Subſtance being the ſurrounding Air, which is a Part of the ſame Whole, and as it were of a Piece with the Earth, the Earth therefore hangs ſuſpended in the Middle, and is no Weight or Preſſure to the Air at all; and ſo the Limbs are no Load to the Body of a Man, nor is the Head a Burden to the Neck, nor do we perceive the Weight of the whole Body to preſs heavy upon the Feet; but whatever Weight is laid upon us from without, and is no Part of us, is a Pain to us, though it be ever ſo ſmall. Of ſo great Concern it is to what every Being is ſeverally united. For the Earth was not brought from any other Place, and then thruſt into the ſtrange Embrace of a different Air, but was formed together with it, and became a regular Part of the World; as our Limbs were produced with the Body, and are eſſential Parts of it.

Besides, the Earth, when it is ſhaken of a ſudden by a violent Thunder, makes every thing that is upon it to tremble; which it could by no means do, unleſs it was cloſely joined to the airy Parts of the World, and to the Heavens above; for they all ſtick cloſely together by common Bonds, and kindly unite from the very Beginning. Don't you obſerve how the moſt ſubtle Power of the Soul ſupports the Body with all its Weight, becauſe it is ſo ſtrictly connected and ſo cloſely joined to it? And what is it but the Force of the Soul which actuates the Limbs that raiſes the Body, and makes it leap nimbly from the Ground? Don't you perceive now what a Subſtance of the moſt ſubtle Nature is able to do, when united with a heavy Body; ſuch as the Air when it is joined to the Earth, and as the Soul to this Body of ours?

Nec nimio Solis major rota, nec minor ardor
Eſſe poteſt, noſtris quàm ſenſibus eſſe videtur.
Nam quibus è ſpatiis cunque Ignes lumina poſſunt
Adjicere, & calidum membris adflare vaporem,
Illa ipſa intervalla nihil de corpore limant
Flammarum, nihilo ad ſpeciem'ſt contractior Ignis.
Proinde calor quoniam Solis, lumenque profuſum
Perveniunt noſtros ad ſenſus, & loca tingunt:
Forma quoque hinc Solis debet filumque videri,
Nil adeo ut poſſis plùs, aut minùs addere verè.
 Lunaque ſive notho fertur loca lumine luſtrans,
Sive ſuam proprio jactat de corpore lucem,
Quicquid id eſt, nihilò fertur majore figura,
Quàm, noſtris oculis quam cernimus, eſſe videtur.
Nam priùs omnia, quæ longè remmota tuemur
Aëra per multum ſpecie confuſa videntur,
Quam minimum filum: quapropter Luna neceſſe'ſt,
Quandoquidem claram ſpeciem, certamque figuram
Præbet, ut eſt oris extremis cunque notata,
Quanta hæc cunq; fuat, tanta hinc videatur in alto.
 Poſtremò, quoſcunque vides hinc ætheris Igneis,
(Quandoquidem, quoſcunque in terris cernimus igneis.
Dum tremor eſt clarus, dum cernitur ardor eorum;

But further; [b] The Orb of the Sun is not much larger, nor is its Heat much greater, than what our Senſes diſcover to us; for at whatever Diſtance the Fire can ſend out its Rays of Light, and warm us with its Heat, that Diſtance takes away nothing from the Bigneſs of the Flame, nor does the Fire appear leſs contracted to the Eye. And therefore, ſince the Heat of the Sun, and his diffuſed Light, do reach our Senſes, and ſhine upon the Earth, you are to conclude, that his Form and Magnitude are no greater nor leſs than they appear to be.

And the Moon, whether ſhe views the World with borrowed Light, or whether ſhe ſhoots out her Beams from her own Body; however it be, ſhe is of no greater Size than to our Senſe ſhe appears: For all Objects we look upon at a great Diſtance, and through a long Tract of Air, ſhew firſt irregular and confuſed, before we diſcover their utmoſt Figure and Proportion. And therefore, ſince the Moon at once preſents to us the certain Form, and the complete Appearance of her whole Orb, ſhe ſhews to us above as great as ſhe really is.

Besides, ſince all our Fires here below, when they are ſeen at a great Diſtance, ſo long as their Light is clear, and their Brightneſs ſhines out to

[b] The Magnitude of the Sun, Moon and Stars, is the ſame as it appears to be: For (ſays he) as we retire from any Fire, ſo long as we are within ſuch a Diſtance of it that we can perceive its Light and Heat, the Fire ſeems no leſs than it does when we are near it; but we feel the Heat, and perceive the Light of the Sun; therefore the Sun is of the ſame Magnitude it ſeems to be. And then, we diſtinctly ſee the utmoſt Verge and Face of the Moon; yet we ſhould ſee it but confuſedly, if we were ſo far off that its Diſtance took away any of its Magnitude. And, laſtly, the Stars are much of the ſame Magnitude they appear; for even the Fires that we ſee here below, at a Diſtance from one another, either by Day or by Night, preſent to our Eyes the like Variety of Sizes.

Perparvum quiddam interdum mutare videntur
Alterutram in partem filum, cùm longiùs abſint,)
Scire licet, perquàm pauxillo poſſe minores
Eſſe, vel exigua majores parte, brevique.
Illud item non eſt mirandum, qua ratione
Tantulus ille queat tantum Sol mittere lumen,
Quod maria, ac terras omneis cœlumque rigando
Compleat, & calido perfundat cuncta vapore.
Nam licet hinc Mundi patefactum totius unum
Largifluum fontem ſcatere, atque erumpere flumen
Ex omni Mundo, quò ſic Elementa vaporis
Undique conveniunt, & ſic conjectus eorum
Confluit, ex uno capite hic ut profluat ardor;
Nonne vides etiam, quàm latè parvus aquaï
Prata riget Fons interdum, campiſque redundet?
Eſt etiam quoque, uti non magno Solis ab igni
Aëra percipiat calidis fervoribus ardor.
Opportunus ita'ſt ſi fortè, & idoneus Aër,
Ut queat accendi parvis ardoribus ictus:
Quod genus interdum ſegetes ſtipulamque videmus
Accipere ex una ſcintilla incendia paſſim,
Forſitan & roſea Sol altè lampade lucens
Poſſideat multum cæcis fervoribus ignem
Circum ſe, nullo qui ſit fulgore notatus,
Æſtiferum ut tantùm radiorum exaugeat ictum.
Nec ratio Solis ſimplex, nec certa pateſcit,

Quo

us, do ſeem to change a little, and ſhew more or leſs contracted; we may conclude, that the Stars we view in the Heavens, are very little either greater or leſs than they appear.

NOR are we to wonder how it comes to paſs, that ſo ſmall a Body as the Sun, is able to emit ſo much Light as to ſpread over the Seas, the whole Earth and the Heavens, and to cheriſh all Things with its kindly Heat: For you may imagine, that from the Sun one large Fountain of Light breaks out, and flows abundantly, like a River, over the whole World; and that the Seeds of Fire from all Parts of the Univerſe meet in the Body of the Sun, and are there collected as into a Spring, from whence the Heat of the whole World is diffuſed abroad. Don't you obſerve how widely a ſmall Fountain of Water ſpreads its Stream over the Meadows, and overflows the Fields?

OR perhaps [c] the Heat flowing from the ſmall Body of the Sun, may inflame the adjacent Air, if the Air be properly tempered and diſpoſed to catch the Fire from the feeble Strokes of Heat; as we ſometimes ſee the Corn and the Stubble to be ſet all in a Blaze from one ſmall Spark falling upon it; or it may be the Sun, ſhining above with roſy Light, has many dark and unſeen Stores of Fire about it, which, though diſtinguiſhed by no outward Brightneſs, may yet increaſe the Heat of its Rays, and make their Strokes the more inflamed.

NOR can [d] one certain Reaſon be aſſigned, why the Sun declines from its Summer Height, and bends

[c] Perhaps the Air near the Sun is ſet on Fire by its Beams, and that many fiery Particles, inviſible to us, are hovering about his Orb; and thence may proceed ſo great a Profuſion of Light and Heat.

[d] He propoſes the Opinion of *Democritus,* who taught that the lower Spheres are rolled and whirled around by the higheſt Orb,

Quo pacto æſtivis è partibus Ægocerotis
Brumaleis adeat flexus, atque inde revertens
Canceris ut vertat metas ſe ad Solſtitialeis:
Lunaque menſibus id ſpatium videatur obire,
Annua Sol in quo conſumit tempora curſu:
Non, inquam, ſimplex his rebus reddita cauſa'ſt.
Nam fieri vel cum primis id poſſe videtur,
Democriti quod ſancta viri ſententia ponit:
Quantò quæque magis ſint terram Sidera propter,
Tantò poſſe minùs cum cæli turbine ferri.
Evaneſcere enim rapidas illius, & acreis
Imminui ſubter vireis, ideoque relinqui
Paullatim Solem cum poſterioribu' Signis,
Inferior multò quòd ſit, quàm fervida Signa:
Et magis hoc Lunam: & quantò demiſſior ejus
Curſus abeſt procul à Cælo, terriſque propinquat,
Tantò poſſe minùs cum Signis tendere curſum.
Flaccidiore etiam quantò jam turbine fertur
Inferior quàm Sol, tantò magis omnia Signa.
Hanc adipiſcuntur, circum, præterque feruntur.
Propterea fit, ut Hæc ad Signum quodque reverti
Mobiliùs videatur, ad Hanc quia Signa reviſunt.
Fit quoque ut è mundi tranſverſis partibus Aër
Alternis certo fluere alter tempore poſſit,

bends his Winter Courſe towards the Tropick of *Capricorn*, and then returning, reaches the Tropick of *Cancer*, and makes the Summer Solſtice; and that the Moon in every Month finiſhes the ſame Courſe through the Twelve Signs, as the Sun takes up a whole Year in running through: I ſay, one certain Reaſon cannot be aſſigned for theſe Events; for perhaps the Cauſe may be what the venerable Opinion of that Great Man *Democritus* has laid down, that the nearer the Stars are to the Earth, they are carried more ſlowly about by the general Motion of the Heavens. For the rapid Force and Celerity of the upper Sky, are much leſſened before they reach the inferior Orbs; and therefore the Sun, with the lower Signs that follow it, is in ſome meaſure left, becauſe it is much lower than the high Region of the Stars: And the Moon is much lower ſtill; and the greater Diſtance from the Heavens ſhe obſerves in her Courſe, and the nearer ſhe approaches the Earth, the leſs is ſhe capable of keeping Pace with the Motions of the Signs, and the ſlower ſhe is in her Motion than the Sun as ſhe moves below him; and the Signs may the more eaſily overtake her, and paſs about and beyond her the oftner: And therefore the Moon ſeems the ſooner to run through all the Signs, when in reality the Signs return to her.

OR perhaps [e] two ſeveral Airs may at certain Seaſons blow from the oppoſite Parts of the World by

Orb, called the *Primum Mobile*, either ſwifter or more ſlow, according to the Diſtance of each Sphere from that higheſt Orb. Thus the Sun moves ſwifter than the Moon, becauſe the Sun is higher, and therefore the Signs more ſeldom overtake and paſs by him than they do by her; nor is it then ſtrange, that the Moon runs through all the Signs in one Month, which the Sun goes through but in twelve.

[e] He introduces two ſeveral Airs waiting on the Sun and Moon; by one of which they are ſhoved down from *Cancer* to

Qui queat æſtivis Solem detrudere Signis
Brumaleis uſque ad flexus, gelidumque rigorem:
Et qui rejiciat gelidis à Frigoris umbris
Æſtiferas uſque in parteis, & fervida Signa.
Et ratione pari Lunam, Stellaſque putandum'ſt,
Quæ volvunt magnos in magnis orbibus annos,
Aëribus poſſe alternis à partibus ire.
Nonne vides etiam diverſis nubila ventis
Diverſas ire in parteis, inferna ſupernis?
Quî minùs illa queant per magnos ætheris orbeis
Æſtibus inter ſe diverſis Sidera ferri?
At nox obruit ingenti caligine terras,
Aut ubi de longo curſu Sol extima cæli
Impulit, atque ſuos efflavit languidus igneis
Concuſſos itere, & labefactos aëre multo:
Aut quia ſub terras curſum convertere cogit
Vis eadem, ſupera terras quæ pertulit orbem.
Tempore item certo roſeam Matuta per oras
Ætheris Auroram defert, & lumina pandit,
Aut quia Sol idem ſub terras ille revertens

by turns; the one may drive the Sun down from the Summer Signs into his Winter Courſe, and the Extremity of Cold; the other may raiſe it from the cold Winter Signs into the Summer Solſtice. And for the ſame Reaſon the Moon and the Stars, which fulfil their Periods and Revolutions in their long Courſes, may be forced upwards and downwards in the Heavens, by two ſeveral Streams of Air likewiſe. Don't you obſerve the Clouds, driven by contrary Winds, move different Ways, the lower oppoſite to thoſe above? What then ſhould hinder that the Stars ſhould not be carried on, by contrary Blaſts of Air, through the great Circles of the Sky?

AND [f] the Night, we imagine, covers the Earth with thick Darkneſs, either becauſe the Sun in his long Courſe has reached the Extremity of the Heavens, and being tired, has blown out his Fire ſcattered by the Swiftneſs of his Motion, and decayed by the Tract of Air he paſſed through; or the ſame Force that raiſed his Orb, and drove it round above, compels him to change his Courſe, and roll beneath the Earth.

AND [g] *Matuta*, the Goddeſs of the Morning, at a fixed Time leads *Aurora* bluſhing through the Regions of the Sky, and opens the Day, either becauſe the Sun, returning from under the Earth,

to *Capricorn*, and by the other heaved up again from *Capricorn* to *Cancer*, and this at fixed and certain Times: And that it may not ſeem incredible, he bids us look on the different Racks of Clouds which the Winds drive ſeveral Ways.

[f] The Night (he ſays) ſucceeds the Day, either becauſe the Sun, being fatigued with the Length of his Journey, is extinguiſhed; or becauſe he is whirled with the ſame Force beneath the Earth by Night, as above the Earth by Day.

[g] The Splendor which we call the Morning, and which before the Riſing of the Sun adorns the Heavens, is occaſioned becauſe the Sun, returning from Weſt to Eaſt, pours forth his Rays before he appears himſelf, or becauſe the Seeds of Fire, &c.

attempts

Anticipat cœlum radiis accendere tentans:
Aut quia conveniunt ignes, & ſemina multa
Confluere ardoris conſuerunt tempore certo,
Quæ faciunt Solis nova ſemper lumina gigni.
Quod genus Idæis fama'ſt è montibus altis
Diſperſos igneis orienti lumine cerni:
Inde coire globum quaſi in unum, & conficere orbem.
Nec tamen illud in his rebus mirabile debet
Eſſe, quòd hæc Ignis tam certo tempore poſſint
Semina confluere, & Solis reparare nitorem.
Multa videmus enim, certo quæ tempore fiunt
Omnibus in rebus, floreſcunt tempore certo
Arbuſta, & certo dimittunt tempore florem.
Nec minùs in certo denteis cadere imperat ætas
Tempore, & impubem molli pubeſcere veſte,
Et pariter mollem malis demittere barbam.
Fulmina poſtremo, Nix, Imbres, Nubila, Venti,
Non nimis incertis fiunt in partibus anni.
Namque ubi ſic fuerunt cauſarum exordia prima,
Atque uti res mundi cecidere ab origine prima,
Conſequa natura'ſt jam rerum ex ordine certo.
Creſcere itemq; Dies licet, & tabeſcere Nocteis,
Et minui Luces, cùm ſumant augmina Noctes:

Aut

attempts to inlighten the World with his Rays, before he appears himſelf; or becauſe the Seeds of Fire that were diſperſed abroad in his Journey the Day before, flow together in the Eaſtern Sky, and illuſtrate the Earth with a faint Light, before they have kindled up anew the Globe of the Sun. This (they ſay) is eaſily diſcovered from the Top of Mount *Ida*; where, upon the Riſing of the Sun, we firſt diſcover his ſcattered Rays, which are afterwards contracted into one Orb, and make up one Ball of Light.

NOR are you to wonder that theſe Seeds of Fire ſhould flow together conſtantly every Day, and repair the Splendor of the Sun; for we obſerve many Things in Nature that act regularly, and at a fixed Time. The Trees look green at a certain Seaſon, and at a certain Seaſon caſt their Leaves; Children at a certain Time ſhed their Teeth; and the Boy grows ripe at a certain Time, and ſhews the ſoft Down upon his Cheeks. And laſtly, The Thunder, the Snow, the Rains, the Clouds, the Winds, are no leſs certain, and fall out in fixed Seaſons of the Year; for the Courſe which Things obſerved from the Beginning of the World, they perſue the ſame, and continue ſtill to act in the ſame certain Order.

THE [h] Days likewiſe increaſe, and the Nights grow ſhorter; and the Nights increaſe, and the Days

[h] It is impoſſible in this Place to explain the whole Syſtem of the celeſtial Globe. The Meaning of the Words *Æquator*, *Æquinox*, *Tropicks*, *Zodiack*, &c. is to be found in every Dictionary. It may be proper only to obſerve here, that the Poet offers three Reaſons for the Length and Shortneſs of the Days and Nights: The firſt, becauſe the Sun makes his Rounds above and below the Earth more ſwiftly at ſome Times than at others; and here he deſcribes the unequal Segments of the diurnal and nocturnal Circles in the oblique Poſition of the Sphere; but from this Rule he excepts the *Æquator*, which in every Obliquity is divided from the *Horizon*

Aut quia Sol idem ſub terras, atque ſuperne,
Imparibus currens anfractibus ætheris oras
Partit: Et in parteis non æquas dividit orbem:
Et quod ad alterutra detraxit parte, reponit
Ejus in adverſa tantò plus parte relatus,
Donicum ad id ſignum cœli pervênit, ubi anni
Nodus nocturnas exæquat lucibus umbras.
Nam medio curſu flatus Aquilonis, & Auſtri,
Diſtinet æquato cœlum diſcrimine metas,
Propter Signiferi poſituram totius orbis;
Annua Sol in quo contundit tempora ſerpens,

Days ſhorten; either becauſe the Sun, in his Courſe above and below the Earth, moves obliquely in unequal Lines, and divides the Heavens into unequal Parts; and what he takes off from one Part of the Heavens, he adds ſo much to the oppoſite Part again, till he arrives at that Sign in the Heavens, where he cuts the [i] *Æquinoctial* Line, and makes equal Day and Night; for this Line is equally diſtant from the the two [k] Tropicks, which are the Bounds of the Sun's Motion towards the North and South; and this is owing to the Obliquity of the [l] *Zodiack*, through which the Sun

Horizon into two equal Parts. And this is the Reaſon that the Sun, being twice within the Year placed in the *Æquator*, makes two *Æquinoxes* in all Countries whatever: This is the true Reaſon; for the Inequality of the Days and Nights proceeds from the oblique Poſition and Site of the *Zodiack*; whence it comes to paſs that they who have a perpetual *Æquinox*, that is, thoſe that live under the *Æquator*, never have the leaſt Inequality, but a conſtant Equality, of Days and Nights, becauſe they inhabit under a ſtraight and direct Sphere; but thoſe that live towards either of the Poles, have their Days and Nights longer or ſhorter, according as they are more remote from the Pole, or nearer advanced to it; but ſuch as live in the moſt oblique Sphere, that is, under either of the Poles, have ſix Months of continual Light, and by turns as many of continual Night and Darkneſs.

[i] This is one of the greateſt Circles of the Sphere; its Poles are the ſame with the Poles of the World, from either of which it is equally diſtant, and divides the celeſtial Globe into the northern and ſouthern *Hemiſphere*.

[k] The Tropicks of *Cancer* and *Capricorn* are the utmoſt Bounds of the Sun's Revolution. They are called Tropicks from the *Greek* Τροπὴ, which ſignifies *Converſion* or *Turning*; becauſe the Sun, when he comes at thoſe Circles, turns back again towards the *Æquator*, nor ever goes beyond thoſe Bounds, either towards the North or South.

[l] The *Zodiack* is a Circle, or *Zone*, obliquely paſſing from Eaſt to Weſt, before the *Equinoctial* and *Solſtitial* Points, and parted in the midſt by the *Ecliptick*, which divides it into two Parts; the one Northern, the other Southern. It is ſaid to be oblique, becauſe it is not an equal Diſtance from each Pole; but being carried croſs the *Torrid Zone*, it reaches both

Obliquo terras, & cælum lumine luſtrans:
Ut ratio declarat Eorum, qui loca cæli
Omnia diſpoſitis ſignis ornata notârunt:
Aut quia craſſior eſt certis in partibus Aër,
Sub terris ideo tremulum jubar hæſitat ignis,
Nec penetrare poteſt facilè atque emergere ad ortus.
Propterea noctes hiberno tempore longæ
Ceſſant, dum veniat radiatum inſigne diei:
Aut etiam, quia ſic alternis partibus anni
Tardiùs & citiùs conſuerunt confluere ignes,
Qui faciant Solem certa de ſurgere parte.
Luna poteſt Solis radiis percuſſa nitere,
Inque dies majus lumen convertere nobis
Ad ſpeciem, quantum Solis ſecedit ab orbe,
Donicum eum contra pleno benè lumine fulſit,
Atque oriens obitus ejus ſuper edita vidit:

Sun finiſhes his annual Revolution, and ſhines upon the Earth and the Heavens with an oblique Light. Such is the Opinion of thoſe who have mark'd out all the Regions of the Heavens, and adorned them with the twelve Conſtellations.

OR it may be, [m] becauſe the Air in ſome Parts is thicker; and therefore the trembling Rays ſtick longer in their Paſſage under the Earth, and cannot ſo eaſily pierce through and diſcharge themſelves, and ſo bring on the Day. For this Reaſon the Nights in the Winter continue longer, till the Sun riſes, and ſcatters the Darkneſs with his Rays of Light.

OR becauſe, at certain Seaſons of the Year, the Seeds of Light which repair the decayed Splendor of the Sun, flow together ſooner or later, and ſo occaſion his Riſing in different Parts of the Heavens.

THE Moon [n] may ſhine with Rays borrowed from the Sun, and appear to us every Day with greater Light, as ſhe retires further from the Sun's Orb; till being directly oppoſite to him, ſhe ſhines out with full Beams, and climbing up the Eaſt, views him from above ſetting in the Weſt;

both the Tropicks, and divides the Circle of the *Æquator*. In the firſt Degree of *Cancer* it touches the North Tropick, which is thence called the *Tropick of Cancer*. It touches the South Tropick in the firſt Degree of *Capricorn*, whence that Tropick has the Name of the *Tropick of Capricorn*. When the Sun comes to the Tropick of *Cancer*, about the Tenth of *June*, then is our Height of Summer, or *Summer Solſtice*; when about the Tenth of *December* he reaches the Tropick of *Capricorn*, then is our Depth of Winter, or the *Winter Solſtice*.

[m] Theſe two Reaſons are trifling.

[n] If the Moon receive her Light from the Sun, if ſhe be a globous Body, and, laſtly, if ſhe make her Rounds below the Sun, then they explain aright her various and manifold Phaſes, who ſay, that the Moon changes her Face according to the different Light ſhe receives from the Sun, as ſhe approaches nearer to him, or retires farther from him.

and

Inde minutatim retrò quaſi condere lumen
Debet item, quantò propius jam Solis ad ignem
Labitur ex alia Signorum parte per orbem:
Ut faciunt, Lunam qui fingunt eſſe pilaï
Conſimilem, curſuſque viam ſub Sole tenere:
Propterea fit uti videantur dicere verum.
Eſt etiam quoque uti proprio cum lumine poſſit
Volvier, & varias ſplendoris reddere formas.
Corpus enim licet eſſe aliud, quod fertur, & unà
Labitur omnimodis occurſans officienſque,
Nec potis eſt cerni, quia caſſum lumine fertur.
Verſarique poteſt, globus ut, ſi fortè, pilaï
Dimidia ex parti candenti lumine tinctus:
Verſandoque globum varianteis edere formas,
Donicum eam partem, quæcunq; eſt ignibus aucta,
Ad ſpeciem vertit nobis, oculoſque patenteis:
Inde minutatim retrò contorquet, & aufert
Luciferam partem glomeraminis, atque pilaï:
Ut Babylonica Chaldæûm doctrina refutans
Aſtrologorum artem contrà convincere tendit:
Proinde quaſi fieri nequeat quod pugnat uterque,
Aut minùs hoc illo ſit cur amplectier auſis.

Denique,

and then ſhe goes [o] backwards as it were, and hides her Light gradually, as ſhe paſſes through the different Signs in her nearer Approaches to the Sun. Thus They explain her Phaſes, who conclude her round like a Ball, and that ſhe moves below the Sun; and they ſeem to be right in their Opinion, and ſpeak the Truth.

The Phaſes of the Moon.

BUT [p] the Moon, poſſibly, may ſteer her Courſe by her own Light, and ſhew different Phaſes and Forms of Brightneſs; for another Body may move below her, and attending all her Motions, may interpoſe and hinder her Light from being ſeen; but this Body, being thick and dark, cannot be diſcovered by the Eye.

AND perhaps [q] the Moon may roll round her *Axis* like a Ball, whoſe one Half only is bright. This Ball, as it moves round its Center, will expreſs the different Appearances of Light, till it turns the whole bright Side to us, and ſhines full upon the open Eye; and then by degrees it turns backward, and takes away its bright Side as it rolls, and we ſee no more of it. This was the Doctrine of the *Chaldeans*, who followed the Hypotheſis of *Beroſus*, and attempted to overthrow the vulgar Aſtrology of the *Greeks*; as if the Schemes of both could not be true, or you had leſs Reaſon to embrace the one than the other.

[o] When the Moon is at Full, ſhe goes as it were backwards under the Earth towards the Sun, and comes up to him; whence it is that ſhe decreaſes by degrees, till being in Conjunction with him, ſhe become inviſible to us.

[p] If the Moon ſhines with unborrowed Light, then we muſt imagine that another Body, which is opacous and totally dark, always moves with the Moon, and obſtructs and turns away her Beams.

[q] He propoſes the Opinion of thoſe, who held one Half of the Moon's Orb to be light, the other Half dark. If this Opinion (ſays he) be true, imagine ſuch an Orb to be turned round on its *Axle*, and it will preſent the different Phaſes we behold in the Moon.

Denique, cur nequeat ſemper nova Luna creari
Ordine formarum certo, certiſque figuris:
Inque dies privos aboleſcere quæque creata,
Atque alia illius reparari in parte, locoque,
Difficile'ſt ratione docere, & vincere verbis:
Ordine cùm videas tam certo multa creari.
It Ver, & Venus, & Veneris prænuntius antè
Pinnatus graditur Zephyrus veſtigia propter:
Flora quibus mater præſpergens ante viaï
Cuncta coloribus egregiis, & odoribus opplet.
Inde loci ſequitur Calor aridus, & comes una,
Pulverulenta Ceres, & Eteſiæ flabra Aquilonum.
Inde Autumnus adit: Graditur ſimul Euius Euan:
Inde aliæ tempeſtates, ventique ſequuntur,
Altitonans Vulturnus, & Auſter fulmine pollens:
Tandem Bruma niveis adſert, pigrumque rigorem
Reddit, Hyems ſequitur, crepitans ac dentibus Algus.
Quò minùs eſt mirum, ſi certo tempore Luna
Gignitur, & certo deletur tempore rurſus:
Cùm fieri poſſint tam certo tempore multa.

Solis item quoque defectus, Lunæq; latebras,
Pluribus è cauſis fieri tibi poſſe putandum 'ſt.

Nam

Lastly, Why may not a Moon be created new every Day, and be diſtinguiſhed by regular Phaſes, and certain Forms of Light? and this new Orb die, and be ſucceeded the next Day by another, that ſhould ſupply its Place in the ſame Part and Quarter of the Heavens? It is difficult to aſſign a Reaſon, and to prove the contrary, eſpecially ſince we obſerve ſo many Things are formed, and ſucceed one another in a regular Order. And firſt the Spring begins, and *Venus* enters, with her Harbingers (the winged *Zephyrs)* marching by her Side; then Mother *Flora* ſpreads the Way before with Flowers of richeſt Dye, and fills the Air with ſweeteſt Odours; and next advance the ſcorching Summer, and her Companion the Duſty Harveſt, and the *Eteſian* Blaſts of Northern Winds; and then comes Autumn, and jolly *Bacchus* ſteps along; now follow ruffling Storms and boiſterous Winds, the roaring South-Eaſt, and the ſultry South full fraught with Thunder; at laſt the Cold brings on the Snow and chilling Froſt, and then creeps Winter, all benumb'd, and chattering with his Teeth. It is the leſs Wonder then, that the Moon ſhould be formed anew at certain Times, and at fixed Seaſons again expire, ſince ſo many Things are ſo regularly produced, and ſucceed one another.

The [r] Eclipſes of the Sun and Moon may proceed, you may ſuppoſe, from many Cauſes; for *Eclipſes.*

[r] The Sun (he ſays) is eclipſed when the Moon, or any opacous Body below his Glebe, interpoſes between that and the Earth, and thus intercepts his Beams, and hinders thoſe Rays of Light from coming forward to the Earth. The Moon is eclipſed when ſhe happens to be in the Shadow of the Earth, or any other opacous Body that is interpoſed between her Orb and the Sun. Beſides, why may not the Sun and Moon grow faint and ſicken, nay, as it were fall into a Swoon, when they chance to go through any Places of the Heavens that are infectious to them, and deſtructive of their Fires and Light?

*Nam cur Luna queat Terram ſecludere Solis
Lumine, & à terris altum caput obſtruere eij,
Objiciens cæcum radiis ardentibus orbem:
Tempore eodem aliud facere id non poſſe putetur
Corpus, quod caſſum labatur lumine ſemper?
Solque ſuos etiam dimittere languidus igneis
Tempore cur certo nequeat, recreareque lumen,
Cùm loca præteriit flammis infeſta per auras:
Quæ faciunt igneis interſtingui atque perire?
Et cur Terra queat Lunam ſpoliare viciſſim
Lumine, & oppreſſum Solem ſuper ipſa tenere,
Menſtrua dum rigidas Coni perlabitur umbras:
Tempore eodem aliud nequeat ſuccurrere Lunæ
Corpus, vel ſupera Solis perlabier orbem,
Quod radios interrumpat, lumenque profuſum?
Et tamen ipſa ſuo ſi fulgit Luna nitore,
Cur nequeat certa mundi langueſcere parte,
Dum loca luminibus propriis inimica pererrat?*

*Quod ſupereſt, quoniam magni per cærula Mundi
Qua fieri quicquid poſſet ratione, reſolvi:
Solis uti varios curſus, Lunæque meatus
Noſcere poſſemus, quæ vis, & cauſa cieret:
Quove modo ſoleant offecto lumine obire,
Et nec opinanteis tenebris obducere terras:
Cùm quaſi connivent, & aperto lumine rurſum
Omnia conviſunt clara loca candida luce.
Nunc redeo ad Mundi novitatem, & mollia terræ
Arva, novo fœtu quid primùm in luminis oras
Tollere, & incertis tentârit credere ventis.*

*Principio, genus Herbarum, viridemque nitorem
Terra dedit circum colleis; campoſque per omneis
Florida fulſerunt viridanti prata colore:*

Arbori-

why ſhould the Moon deprive the Earth of the Sun's Light, and as ſhe ſhines above oppoſe her Body to him, and ſtop his burning Rays by thruſting her dark Orb between; and not another Body, wholly dark, be thought to interpoſe at ſuch a Time, and produce the ſame Effect? And why may not the Sun grow faint, and deaden his Light at a certain Time, and renew it again when he has paſſed certain Regions of the Air, that are Enemies to his Beams, and deſtroy and extinguiſh his Fires? And then again, while the Moon in her monthly Courſe paſſes by the rigid Shadow of the Earth, which is of a Conic Figure, why ſhould the Earth rob the Moon of Light, and being above the Sun, hold his Rays ſhut in; and why may not another Body at the ſame Time move below the Moon, and paſs above the Body of the Sun, that may intercept his Rays, and ſtop his ſpreading Fires? And yet, if the Moon be allowed to ſhine with her own Beams, why may not her Brightneſs decay in certain Parts of the World, as ſhe paſſes through Places that are Enemies to her Light?

AND now, ſince I have explained from what Cauſes proceed the Motions of all the celeſtial Bodies, and given you a Rule to know what Force, what Power, drives on the various Courſes of the Sun, and the Wandrings of the Moon; in what manner their ſeveral Rays are intercepted, and the Earth is covered over with ſurpriſing Darkneſs, as if they wink'd; and how again they ſpread open their Beams, and viſit the World with ſhining Light: I now return to the new-form'd Earth, and her tender Soil, to find what kind of Beings ſhe firſt raiſed into Light, what Offspring ſhe firſt ventured to commit to the faithleſs Winds.

AND firſt the Earth produced the Herbs, and ſpread a gay Verdure over all the Hills, and the gaudy Fields ſhone all around with Green; *Herbs firſt produced.*

Arboribuſque datum 'ſt variis exinde per auras
Creſcendi magnum immiſſis certamen habenis.
Ut Pluma atque Pili primùm Setæque creantur
Quadrupedum in membris, & corpore pennipotentum:
Sic nova tum Tellus herbas virgultaque primùm
Suſtulit: inde loci Mortalia ſæcla creavit
Multa modis multis varia ratione coorta.
Nam neque de Cælo cecidiſſe Animalia poſſunt,
Nec terreſtria de ſalſis exiſſe lacunis.
Linquitur ut meritò maternum nomen adepta
Terra ſit, è terra quoniam ſunt cuncta creata.
Multaque nunc etiam exiſtunt animalia Terris,
Imbribus, & calido Solis concreta vapore.
Quò minùs eſt mirum, ſi tum ſunt plura coorta,
Et majora nova Tellure, atque Æthere adulto.
Principiò, genus Alituum, variæque Volucres
Ova relinquebant excluſæ tempore verno:
Folliculos ut nunc teretes æſtate Cicadæ
Linquunt, ſponte ſua victum, vitamque petentes.
Tum tibi Terra dedit primùm Mortalia ſæcla:
Multus enim Calor, atque Humor ſuperabat in arvis.
Hinc ubi quæque loci regio opportuna dabatur,
Creſcebant Uteri terræ radicibus apti;
Quos ubi tempore maturo patefecerat ætas

and Nature gave the ſeveral Trees a Power to raiſe themſelves, and grow up with their ſpreading Branches into the Air. As Feathers, and Hair, and Briſtles, were at firſt produced from the Limbs of Beaſts and the Bodies of Birds, ſo the new Earth firſt bore the Herbs and the Trees, and then ſhe formed the many kinds of living Creatures, for various Ends, and after a different Manner: For the Race of Animals did not originally fall down from the Skies, nor could terreſtrial Beings riſe out of the ſalt Sea; and therefore we ſay that the Earth juſtly obtained the Name of *Mother*, becauſe out of Her all Things were formed. Even now many Animals riſe from the Earth, and are produced by Moiſture and the Heat of the Sun; and therefore the Wonder is the leſs, that many more ſhould have been created in the Beginning of the World, and of a larger Size, when the Earth was freſh as a young Bride, and her Huſband *Æther* in the Flower of his Age. *Then Trees.*

Of all the Animal Creation, the feather'd Kind, and various Breed of Birds, firſt broke through the Priſon of the Egg in Time of Spring; as Graſhoppers in the Summer now burſt their curious little Bags, and of themſelves know how to ſeek their Food and preſerve Life. And the [s] Earth next produced the Race of Men and Beaſts, for then there was abundance of vital Heat and Moiſture in the Soil; and where the Place was proper, a ſort of Wombs grew up, fixed and ſticking in the Earth by their Roots. Theſe the Infants ripe for Birth *Birds the firſt Animals.* *The Origin of Man.*

[s] After Birds were hatch'd from Eggs in the Spring, then other Animals and Men burſt forth from certain little Bags or Bladders, which he calls Wombs, that ſtuck to the Earth. For their Nouriſhment, a proper Liquor, like Milk, flowed from the Veins of Mother *Earth* into their infant Mouths; for the Earth, it ſeems, when ſhe brought forth her Young, had Milk in thoſe Days, no leſs than Women now, when they bring forth Children.

Infantum fugiens humorem, auraſque petiſſens,
Convertebat ibi Natura foramina terræ,
Et ſuccum venis cogebat fundere apertis
Conſimilem Lactis: ſicut nunc Fœmina quæque
Cùm peperit, dulci repletur Lacte, quòd omnis
Impetus in mammas convertitur ille alimenti.
Terra cibum Pueris, veſtem Vapor, Herba cubile
Præbebat multa & molli lanugine abundans.
At novitas Mundi nec frigora dura ciebat,
Nec nimios æſtus, nec magnis viribus auras.
Omnia enim pariter creſcunt, & robora ſumunt.
Quare etiam atque etiam maternum nomen adepta
Terra tenet meritò, quoniam genus ipſa creavit
Humanum, atque Animal prope certo tempore fudit
Omne, quod in magnis bacchatur montibu' paſſim,
Aëriaſque ſimul Volucreis variantibu' formis.
Sed quia finem aliquam pariendi debet habere,
Deſtitit, ut Mulier ſpatio defeſſa vetuſto,
Mutat enim mundi naturam totius ætas,
Ex alioque alius ſtatus excipere omnia debet,
Nec manet ulla ſui ſimilis res: omnia migrant,
Omnia commutat Natura, & vertere cogit.
Namque aliud putreſcit, & ævo debile languet:
Porro aliud concreſcit, & è contemtibus exit.
Sic igitur Mundi naturam totius ætas
Mutat, & ex alio Terram ſtatus excipit alter,
Quod potuit, nequeat: poſſit, quod non tulit antè.
Multaque tum Tellus etiam portenta creare
Conata'ſt, mira facie, membriſque coorta;

(Andro-

broke through; they left their moiſt Incloſure, and ſprung out into the Air. In thoſe Places Nature prepared the Pores of the Earth, and forced her to pour from her open Veins a Liquor like Milk; as a Woman after Delivery is full of ſweet Milk, becauſe the principal Juices of her Food fly into her Breaſts. The Earth gives Nouriſhment to the Infant, the Warmth of the Sun is inſtead of Clothes, and the Graſs abounding with Plenty of ſoft Down affords the Bed.

BUT this new World produced no chilling Cold, nor too much Heat, nor Force of ruſhing Winds; for Things increaſed and grew violent by degrees: And therefore, by the ſtricteſt Laws of Juſtice, does the Earth claim the Name of *Mother*, becauſe in this Manner, for ſome Time, ſhe herſelf produced Mankind, and formed every ſavage Beaſt that wildly roars upon the Mountain Tops, and the great Variety of Birds, diſtinguiſhed by the Beauty of their Feathers.

AND that the Earth might have ſome Releaſe, and not be always in Labour, ſhe at length left off, as a Woman worn out and paſt her Prime; for Time changes the Nature of the whole World; one Body continually riſes from another; no Being remains long like itſelf; Things are in a perpetual Flux; Nature changes and forces every thing about; one Thing decays and grows weak by Time, another becomes vigorous and flouriſhes in its Strength. Thus Time alters the Face of the whole World; and the Earth paſſes from one State to another. She can no more produce the Creatures ſhe once did, and now ſhe bears what ſhe could not do before.

THE Earth, it may be ſuppoſed, was at firſt delivered of many monſtrous Births, of a wonderful Shape, and of an uncommon Size (and ſome between

(Androgynum inter utrum, nec utrumque & utrinque
remotum)
Orba pedum partim, manuum viduata viciſſim,
Multa ſine ore etiam, ſine voltu cæca reperta,
Vinctaque membrorum per totum corpus adhæſu:
Nec facere ut poſſent quicquam; nec cedere quoquam,
Nec vitare malum, nec ſumere quod foret uſus.
Cætera de genere hoc monſtra, ac portenta creabat:
Nequicquam: quoniam Natura abſterruit auctum:
Nec potuere cupitum ætatis tangere florem,
Nec reperire cibum, nec jungi per Veneris res.
Multa videmus enim rebus concurrere debere,
Ut propagando poſſint producere ſæcla.
Pabula primùm ut ſint, genitalia deinde per artus
Semina quà poſſint membris manare remiſſis:
Fæminaque ut maribus conjungi poſſit, habendum
Mutua queis nectant inter ſe gaudia, utriſque.
Multaque tum interiiſſe Animantum ſæcla neceſſe'ſt.
Nec potuiſſe propagando procudere prolem.
Nam quæcunque vides veſci vitalibus auris,
Aut Dolus, aut Virtus, aut denique Mobilitas eſt
Ex ineunte ævo genus id tutata reſervans.
Multaque ſunt, nobis ex Utilitate ſua quæ
Commendata manent tutelæ tradita noſtræ,
Principiò, genus acre Leonum, ſævaque ſæcla
Tutata'ſt Virtus, Vulpeis Dolus, & Fuga Cervos.
At leviſomna Canum fido cum pectore corda,
Et genus omne, quod eſt Veterino ſemine partum,
Lanigeræque ſimul pecudes, & Bucera ſæcla,
Omnia ſunt Hominum tutelæ tradita, Memmi.
Nam cupidè fugere Feras, pacemque ſecutæ
Sunt, & larga ſuo ſine pabula parta labore:

between the two Sexes, not properly of both, yet not far removed from either) ſome without Feet, and others without Hands; many without a Mouth and Eyes; ſome had their Limbs growing and ſticking together over all their Bodies, that they could do no Office of Life, nor move from their Place, nor fly what was hurtful, nor receive Food to preſerve their Beings. Many other Monſters, and ſtrange Productions of this kind, were at firſt formed; but in vain! For Nature was ſhock'd, and would not ſuffer them to increaſe; they could not arrive to any Maturity of Age, nor could they find their Food, nor taſte the Pleaſures of Love; for many Circumſtances, we obſerve, muſt kindly agree, that Creatures might be able to propagate their Kind. Firſt of all there muſt be proper Food, and then fit Organs for the genial Seed to flow through from all the Limbs; and that the Male and Female may be cloſely joined, they muſt be furniſhed with thoſe Parts that may promote the mutual Delights of both. *The Earth produced Monſters.*

And therefore many kind of Animals muſt needs be extinct, nor could they all by Propagation continue their Species; for almoſt every Race of Creatures we now ſee living, either their Cunning, or their Courage, or their Swiftneſs, have ſecured and preſerved them from the very Beginning. And there are many that, from their Uſefulneſs to Mankind, have recommended themſelves to our Defence. And firſt, the fierce Breed of Lions, and their ſavage Race, their Courage have protected; Craft ſecures the Fox, and Swiftneſs the Stag. But the watchful and faithful Race of Dogs, all Beaſts of Burden, the Flocks and Herds, all Theſe, my *Memmius*, are committed to the Care of Man. Theſe fly ſwiftly from the Rage of wild Beaſts; they love a quiet Life; and depend upon us for their Fill of Proviſion, without any Labour

Quæ damus Utilitatis eorum præmia cauſa.
At, queis nil horum tribuit Natura, nec ipſa
Sponte ſua poſſent ut vivere, nec dare nobis
Utilitatem aliquam, quare pateremur eorum
Præſidio noſtro paſci genus, eſſeque tutum?
Scilicet hæc aliis prædæ, lucroque jacebant
Indupedita ſuis fatalibus omnia vinclis,
Donicum ad interitum genus id natura redegit.
   Sed neque Centauri fuerunt, neque tempore in ullo
Eſſe queat duplici natura, & corpore bino
Ex alienigenis membris compacta poteſtas,
Hinc illinc par vis ut non ſic eſſe potis ſit.
Id licet hinc quamvis hebeti cognoſcere corde.
Principio, circum tribus actis impiger annis
Floret Equus, Puer haudquaquam: quin ſæpe etiam num
Ubera mammarum in ſomnis lactantia quærit.
Poſt ubi Equum validæ vires ætate ſenecta,
Membraque deficiunt fugienti languida vita:
Tum demum Pueris ævo florente juventas
Occipit, & molli veſtit lanugine malas:
Ne fortè ex Homine, & Veterino ſemine equorum
Confieri credas Centauros poſſe, nec eſſe:
Aut rapidis canibus ſuccinctas ſemimarinis
Corporibus Scyllas, & cætera de genere horum,
Inter ſe quorum diſcordia membra videmus:
Quæ neque floreſcunt pariter, neque robora ſumunt
Corporibus, neque projiciunt ætate ſenecta:
Nec ſimili Venere ardeſcunt, nec moribus unis
Conveniunt, nec ſunt eadem jucunda per artus.
Quippe videre licet pingueſcere ſæpe Cicuta
Barbigeras pecudes, Homini quæ 'ſt acre Venenum.

Flamma

Labour of their own, which we allow them plentifully, as a Reward for the Benefits we receive from them. But thoſe Creatures on whom Nature has beſtowed no ſuch Qualities, that cannot ſupport themſelves, nor afford us any Advantage, why ſhould we ſuffer ſuch a Race to be fed by our Care, or defended by our Protection? Theſe, by the unhappy Laws of their Nature being deſtitute of all Things, became an eaſy Prey to others, till their whole Species was at laſt deſtroyed.

No Centaurs nor Chimæra's.

But never have there been any ſuch Things as *Centaurs*; nor could a Creature at any Time be formed from a doubtful Nature, from two Bodies, and out of Members ſo different and diſagreeable. The Limbs and Faculties of a Man and Horſe, could never act uniformly together, with all their Power; and this is obvious to a very mean Apprehenſion: For a Horſe at three Years old is ſtrong and active; a Child is far from being ſo, at that Age he is commonly feeling for the Mother's Breaſt in his Sleep; and when the Horſe's Strength decays by old Age, and his feeble Limbs fail him at the End of Life, then the Boy flouriſhes in the Prime of Youth, and the Beginnings of a Beard appear upon his Cheeks. Never think therefore, that there is or ever can be ſuch a Creature as a *Centaur*, made up of a human Nature, and the ſervile Seed of a Horſe; or that there are any ſuch Things as *Scylla's*, having their Loins ſurrounded with the ravenous Bodies of half Sea-Dogs. Believe nothing of other Monſters like theſe, whoſe Members we obſerve ſo oppoſite and diſagreeing; which neither live to the ſame Age, nor grow ſtrong or decay together; which neither are inflamed with the ſame ſort of Love, nor have the ſame Diſpoſitions, nor preſerve their Bodies by the ſame Food; for Goats, we ſee, often grow fat with Hemlock, which to Men is ſharp Poiſon. And ſince

Fire

Flamma quidem verò cum corpora fulva leonum
Tam ſoleat torrere, atque urere, quàm genus omne
Viſceris, in terris quodcunque & ſanguinis extet:
Quî fieri potuit, triplici cum corpore ut una
Prima Leo, poſtrema Draco, media ipſa Chimæra
Ore foras acrem efflaret de corpore flammam?
Quare etiam Tellure nova, Cœloque recenti
Talia qui fingit potuiſſe animalia gigni,
Nixus in hoc uno novitatis nomine inani;
Multa licet ſimili ratione effutiat ore:
Aurea tum dicat per terras Flumina volgò
Fluxiſſe, & Gemmis florere Arbuſta ſuëſſe:
Aut Hominem tanto membrorum eſſe impete natum,
Trans maria alta pedum niſus ut ponere poſſet;
Et manibus totum circum ſe vertere cœlum.
Nam quòd multa fuere in terris ſemina rerum,
Tempore quo primùm Tellus Animalia fudit:
Nil tamen eſt ſigni, miſtas potuiſſe creari
Inter ſe pecudes, compactaque membra animantum:
Propterea quia quæ de terris nunc quoque abundant
Herbarum genera, ac Fruges, Arbuſtaque læta,
Non tamen inter ſe poſſint complexa creari.
Res ſic quæque ſuo ritu procedit: & omnes
Fœdere naturæ certo diſcrimina ſervant.
Et genus humanum multò fuit illud in arvis
Durius, ut decuit, Tellus quod dura creâſſet:
Et majoribus & ſolidis magis oſſibus intùs
Fundatum, & validis aptum per viſcera nervis;
Nec facilè ex æſtu, nec frigore quod caperetur:
Nec novitate cibi nec labi corporis ulla.
Multaque per cœlum Solis volventia luſtra
Volgivago vitam tractabant more ferarum.
Nec robuſtus erat curvi Moderator aratri

Quiſquam

Fire will ſcorch and burn the yellow Body of a Lion, as well as the Bowels of any other Creature living with Blood in its Veins, how could a *Chimæra*, with his Body of three Kinds, with a Lion's Head, a Dragon's Tail, and the Middle like a Goat, blow abroad a fierce Flame out of his Body?

And therefore Thoſe who pretend that this new Earth and vigorous *Æther* could produce ſuch Creatures as Theſe, and ſupport their Fictions only upon the empty Argument of their being New, may with the ſame Reaſon put upon Us with other Fables; they may as well tell us that golden Rivers flow through the Earth, that Trees bloſſom with Diamonds, that Men were made with ſuch mighty Strength and Bulk of Limbs, that they could ſtride with their Feet over wide Seas, and whirl about the Body of the Heavens with their Hands; for though there were many Seeds of Things in the Womb of the Earth, when ſhe firſt began the Production of living Creatures, this is no Rule that Animals could be formed of a mixed Nature, and compounded of different Bodies. The various Products of the Earth, which are in great Abundance, the Herbs, the Fruits and pleaſant Trees, never blended in ſuch Confuſion together; every thing proceeds in its own proper Order, and preſerves its diſtinct Kind by the eſtabliſhed Laws of Nature.

The State of Man.

And the firſt Race of Men were much hardier upon the Earth, as 'twas fit they ſhould, for the hard Earth bore them. They were built within upon larger and more ſolid Bones, and their Limbs were ſtrained with ſtronger Nerves; nor did they eaſily feel the Inclemency of Heat or Cold, or were affected with the Strangeneſs of their Food, or any Weakneſs of Body. They led a long Life of many rolling Years, and wander'd about like wild Beaſts. There was no luſty Huſbandman to guide the

Quiſquam, nec ſcibat ferro molirier arva;
Nec nova defodere in terram virgulta, nec altis
Arboribus veteres decidere falcibu' ramos.
Quod Sol, atque Imbres dederant, quod Terra creârat
Sponte ſua, ſatis id placabat pectora donum;
Glandiferas inter curabant corpora quercus
Plerumque, & quæ nunc hiberno tempore cernis
Arbuta Pœniceo fieri matura colore,
Plurima tum Tellus etiam majora ferebat:
Multaque præterea novitas tum florida mundi
Pabula dia tulit, miſeris mortalibus ampla.
At ſedare ſitim Fluvii Fonteſque vocabant:
Ut nunc montibus è magnis decurſus aquaï
Claricitat latè ſitientia ſæcla Ferarum.
Denique noctivagi ſilveſtria templa tenebant
Nympharum, quibus exibant humore fluenta
Lubrica, proluvie larga lavere humida ſaxa,
Humida ſaxa ſuper viridi ſtillantia muſco:
Et partim plano ſcatere atque erumpere campo.
Necdum res Igni ſcibant tractare, nec uti
Pellibus, & Spoliis corpus veſtire ferarum:
Sed Nemora, atque cavos Monteis, Sylvaſque colebant,
Et frutices inter condebant ſqualida membra,
Verbera ventorum vitare imbreiſque coacti.
Nec commune bonum poterant ſpectare, nec ullis
Moribus inter ſe ſcibant, nec legibus uti.
Quod cuique obtulerat prædæ fortuna, ferebat,
Sponte ſua ſibi quiſque valere & vivere doctus.
Et Venus in ſylvis jungebat corpora amantum.
Conciliabat enim vel mutua quamque cupido,
Vel violenta Viri vis, atque impenſa libido:

the Plough, or that knew how to cultivate the Fields; none to plant young Stocks in the Ground, or with Pruning-Hooks to lop the old Branches from the high Trees. What the Sun, the Rain, and the Earth voluntarily produced, that Bounty ſatisfied their grateful Hearts. They commonly refreſhed their Bodies with Acorns among the Oaks, and with thoſe wild Apples which you ſee ripen in Winter, of a red Colour, which the Earth then bore in Abundance, and of a larger Size. Many other excellent Fruits the new Earth, freſh and in her Prime, produced in great Plenty for her wretched Offspring.

BUT the Rivers and the Springs invited them to cool their Thirſt, as the Fall of Waters from the high Hills call now upon the thirſty Race of Beaſts; and wandering in the Night, they reſted in hollow Caves, the *Sylvan* Temples of the Nymphs; whence flowed a running Stream, that waſhed the ſlippery Stones with its large Current; among the ſlippery Stones, cover'd with moſſy Green, it found its Way, and ſome of its little Tide broke out and ſpread into the Plain below.

AS yet they knew nothing of Fire to dreſs their Food, nor the Uſe of Skins, or how to cover their Bodies with the Spoils of Beaſts; but inhabited the Groves, the hollow Mountains and the Woods, and hid their naked Bodies among the Shrubs; this they did to avoid the Rains and the Blaſts of Wind. They had no Regard to the common Good; they had no Order among them, or the Uſe of Laws; every Man ſeized for his own what Fortune gave into his Power; every one conſulted his own Safety, and took care of himſelf. Their Amours were conſummated in the Woods; either the Ladies were urged on by mutual Heat, or they were overcome by the ſuperior Force and raging Fire of their Gallants, or

Vel pretium, Glandes, atque Arbuta, vel Pira lecta.
Et manuum mira freti virtute, pedumque,
Conſectabantur ſylveſtria ſæcla Ferarum
Miſſilibus ſaxis, & magno pondere clavæ,
Multaque vincebant, vitabant pauca latebris:
Setigeriſque pares Suibus ſylveſtria membra
Nuda dabant terræ nocturno tempore capti,
Circum ſe foliis ac frondibus involventes.
Nec plangore diem magno, Solemque per agros
Quærebant pavidi, palantes noctis in umbris:
Sed taciti reſpectabant, ſomnoque ſepulti,
Dum roſea face Sol inferret lumina cœlo.
A parvis quod enim conſuerant cernere ſemper
Alterno tenebras, & lucem tempore gigni,
Non erat, ut fieri poſſet, mirarier unquam,
Nec diffidere, ne Terras æterna teneret
Nox, in perpetuum detracto lumine Solis.
Sed magis illud erat curæ, quod ſæcla Ferarum
Infeſtam miſeris faciebant ſæpe quietem:
Ejectique domo fugiebant ſaxea tecta
Setigeri Suis adventu, validique Leonis,
Atque intempeſta cedebant nocte paventes
Hoſpitibus ſævis inſtrata cubilia fronde.
Nec nimio tum plus, quam nunc, mortalia ſæcla
Dulcia linquebant labentis lumina vitæ.
Unus enim tum quiſque magis deprenſus eorum
Pabula viva feris præbebat dentibus hauſtus:
Et nemora ac monteis gemitu, ſylvaſque replebat,
Viva videns vivo ſepeliri viſcera buſto.
At quos effugium ſervârat, corpore adeſo,

were ſoftned by Preſents, a Diſh of Acorns, of Apples, or of choice Pears.

These unpoliſhed Mortals, relying on the mighty Strength of their Arms, and the Swiftneſs of their Feet, perſued the wild Beaſts through the Woods, with miſſive Stones and heavy Clubs. Many they hunted down; ſome ſecured themſelves in the thick Brakes; when Night overtook them, like briſtly Hogs, they threw their rough Bodies naked upon the Ground, and rolled themſelves up in Leaves and Graſs; nor did they run howling about the Fields, frighten'd that the Day was gone and the Sun was ſet, or wander'd about in the Darkneſs of the Night; but they waited without Complaint, and lay buried in ſoft Sleep, till the Sun with his roſy Beams ſhould again ſpread Light over the Heavens. For, from their very Infancy, they had been uſed to obſerve, that there was a regular Succeſſion of Light and Darkneſs; and therefore they did not think it poſſible, they never feared or diſtruſted, that an Eternal Night ſhould cover the Earth, or that the Light of the Sun would never more return.

But what diſturb'd them moſt was, that the wild Beaſts often ſurpriſed and deſtroyed them when they were aſleep: They were forced to quit their Haunts, and fly out of the Caverns of the Rocks, at the Approach of the rough Boar or the ſtrong Lion; and trembling, in the dead of Night, to give up their Beds of Leaves to their cruel Gueſts.

And yet, in thoſe Times, fewer died than do now; for then the One unhappy Wretch that was ſeized, was ſure to be devoured alive between their cruel Teeth; and therefore he filled the Groves, the Mountains and the Woods with his Cries, as he ſaw his reeking Bowels buried in a living Grave: But thoſe who ſaved themſelves by

Poſterius tremulas ſuper ulcera terra tenentes
Palmas, horriferis accibant vocibus Orcum,
Donicum eos vita privârunt Vermina ſæva,
Experteis opis, ignaros quid volnera vellent.
At non multa Virùm ſub ſignis millia ducta
Una dies dabat exitio: nec turbida ponti
Æquora lædebant naves ad ſaxa, viroſque.
Sed temerè, incaſsùm Mare fluctibu' ſæpe coortis
Sævibat, leviterque minas ponebat inaneis,
Nec poterat quemquam placidi pellacia Ponti
Subdola pellicere in fraudem ridentibus undis.
Improba navigii ratio tum cæca jacebat.
Tum Pænuria deinde cibi, languentia letho
Membra dabat: contra nunc rerum Copia merſat.
Illi imprudentes ipſi ſibi ſæpe Venenum
Vergebant: nunc dant aliis ſollertiùs ipſi.
Inde Caſas poſtquam, ac Pelleis, Ignemque pararunt,
Et Mulier conjuncta Viro conceſſit in unum:
Caſtaque privatæ Veneris connubia læta
Cognita ſunt, Prolemque ex ſe videre creatam:
Tum genus Humanum primùm molleſcere cœpit.
Ignis enim curavit, ut alſia corpora frigus
Non ita jam poſſent cœli ſub tegmine ferre:
Et Venus imminuit vireis, Puerique parentum
Blanditiis facilè ingenium fregêre ſuperbum.
Tunc & amicitiam cœperunt jungere habentes
Finitima inter ſe nec lædere, nec violare:
Et pueros commendârunt, muliebreque ſæclum
Vocibus, & geſtu, cùm balbè ſignificarent,
Imbecillorum eſſe æquum miſererier omnium.
Non tamen omnimodis poterat concordia gigni:

Flight, with their Bodies torn, and covering their ſmarting Wounds with trembling Hands, call'd upon Death in dreadful Accents, till gnawing Worms put an End to their Life; for they were unſkilled in Medicine, and ignorant what to apply to their gaping Sores.

BUT then many Thouſands did not fall in Battle in one Day; no boiſterous Waves daſhed Ships and Men againſt the Rocks. The Sea then, and its ſwelling Tides, raged in vain, and to no purpoſe, and laid aſide its empty Threats, and grew calm again; nor could the deceitful Flattery of its ſmooth Waters cheat any one into the Deceit, or tempt him to venture upon the ſmiling Surface. The dangerous Art of Sailing was then unknown. Many then languiſhed and died wretchedly for want of Food; but now Plenty is the Deſtruction of Mankind. Some then, through Ignorance, would mix Poiſon for themſelves; now they ſtudy the Art, and give it to others.

BUT when they began to build Huts, and provided themſelves with Skins and Fire; when One to One was joined for Life together, and the chaſte ſweet Delights of conſtant Love were now firſt felt, and they ſaw a lovely Train of Children of their own; then this hardy Race firſt began to ſoften; for being uſed to Fire, their tender Bodies could not bear ſo well the Cold of the open Air; and Love impaired their Strength, and the Children, by their little Arts of Fondneſs, eaſily ſoftned the haughty Temper of their Parents: Then thoſe who lived near together began to cultivate a Friendſhip, and agreed not to hurt or injure one another. They undertook the Protection of Children and Women, and declared, by Signs and broken Words, that the Weaker ſhould be underſtood as proper Objects of Compaſſion. This mutual Amity, though it did not prevail among

Sed bona, magnaque pars ſervabant fœdera caſti:
Aut genus Humanum jam tum foret omne peremptum,
Nec potuiſſet adhuc perducere ſæcla propago.
At varios linguæ Sonitus Natura ſubegit
Mittere, & Utilitas expreſſit nomina rerum:
Non alia longè ratione, atque ipſa videtur
Protrahere ad geſtum Pueros infantia linguæ,
Cùm facit, ut digito, quæ ſint præſentia, monſtrent.
Sentit enim vim quiſque ſuam, quam poſſit abuti,
Cornua nata priùs vitulo quam frontibus extent,
Illis iratus petit, atque inſenſus inurget.
At catuli Pantherarum, ſcymnique Leonum
Unguibus, ac pedibus jam tum, morſuque repugnant,
Vixdum cùm ipſis ſunt dentes ungueſque creati.
Alituum porro genus alis omne videmus
Fidere, & à pennis tremulum petere auxiliatum.

Proinde

them all, yet the greater and better Part kept their Faith, and lived peaceably together; otherwiſe the whole Race of Men had been ſoon deſtroyed, and the Species could never have been preſerved to this Time.

[t] NATURE compelled them to uſe the various Sounds of the Tongue, and Convenience taught them to expreſs the Names of Things; like Children, before they can well ſpeak, are forced to make uſe of Signs, and are obliged to point with their Finger to the Objects that lie before them; for every Creature is ſenſible what Faculties it has, and how it is to uſe them. So Calves, before the Horns appear upon their Foreheads, will butt fiercely, and puſh with them, when they are enraged; and the Whelps of Panthers and Lions will defend themſelves with their Claws, and Feet, and Teeth, when their Claws and Teeth are ſcarce to be ſeen; and all kind of Birds, we obſerve, truſt to their Wings, and rely upon the fluttering Support of their Pinions.

How Names were firſt impoſed.

[t] It may be reaſonably aſked, how Leagues could be made, and Societies eſtabliſhed, among Men, who perhaps indeed could think, but had not yet learnt to utter their Thoughts? *Lucretius* anſwers, that the firſt Men were conſcious to themſelves of their own Powers and natural Faculties; and that they uttered ſeveral Sounds, as each Object that they ſaw, or as any thing that they felt, cauſed in them either Fear, Joy, Pain, Grief, *&c.* for Nature herſelf compelled them to this; and therefore Horſes, Dogs, Birds, in ſhort, all Animals that have Breath, do the like. And thus Man too, at firſt, ſtammered only imperfect and inarticulate Sounds; but no Commerce was yet eſtabliſhed, they had no mutual Communication with one another; nor indeed could any ſuch Thing be, till Names were given to Things. Every Man therefore perceived that it would be uſeful to him and others, to agree upon a certain Name for each Thing. Thus all who were enter'd into one Society, agreed among themſelves upon the ſame Names of Things; and thus the Uſefulneſs of calling Things by Names, gave occaſion for the Invention of Words: But for any to pretend that one Man gave Names to all Things, is wretchedly abſurd and fooliſh.

Proinde putare Aliquem tum nomina diſtribuiſſe
Rebus, & inde Homines didiciſſe vocabula prima,
Deſipere'ſt: nam cur Hic poſſet cuncta notare
Vocibus, & varios ſonitus emittere linguæ,
Tempore eodem Alii facere id non quiſſe putentur?
Præterea, ſi non Alii quoque vocibus uſi
Inter ſe fuerant: unde inſita notities eſt
Utilitatis, & unde data'ſt Huic prima poteſtas,
Quid vellet facere, ut ſcirent, animoque viderent?
Cogere item plureis Unus, victoſque domare
Non poterat, rerum ut perdiſcere nomina vellent:
Nec ratione docere ulla, ſuadereque ſurdis,
Quid facto eſſet opus, faciles neq; enim paterentur,
Nec ratione ulla ſibi ferrent ampliùs aureis
Vocis inauditos ſonitus obtundere fruſtra.
Poſtremò, quid in hac mirabile tantopere eſt re,
Si genus Humanum, cui vox, & lingua vigeret,
Pro vario ſenſu varias res voce notaret,
Cùm Pecudes mutæ, cùm denique ſæcla Ferarum
Diſſimileis ſoleant voces variaſque ciere,
Cùm Metus, aut Dolor eſt, & cùm jam Gaudia gliſcunt?
Quippe etenim id licet è rebus cognoſcere apertis.
Inritata canum cùm primum magna Moloſsûm
Mollia ricta fremunt duros nudantia denteis:
Longè alio ſonitu rabie diſtracta minantur:
Et cùm jam latrant, & vocibus omnia complent,
At catulos blandè cùm lingua lambere tentant,
Aut ubi eos jactant pedibus, morſuque petentes,
Suſpenſis teneros imitantur dentibus hauſtus:

Longè

BUT to think that one Man gave Names to all Things, and that Men from thence learnt the firſt Elements of Speech, is abſurd and ridiculous; for why ſhould one Man diſtinguiſh every thing by a Name, and uſe the various Accents of the Tongue, and at the ſame time another not be as capable of doing This as He?

BESIDES, if others had not the Uſe of Words among them as ſoon, how could they be made acquainted with the Uſe of them? or by what Art would this one Man make them know and underſtand what he deſigned? One alone could not compel the reſt, and by Force make them learn the Catalogue of his Names. He could not prevail by Reaſon, or perſuade Men ſo unfit to hear, to do as he directed; nor would they bear with Patience, or by any means endure, to have the ſtrange Sounds of unintelligible Words any longer rattling in their Ears to no purpoſe.

AND then, what is there ſo very wonderful in This, that Men, to whom Nature has given a Voice and a Tongue, ſhould, according to the various Knowledge they had conceived of the great Variety of Things, diſtinguiſh each of them by a proper Name; when mute Cattle, and the ſeveral Kinds of wild Beaſts, expreſs their Paſſions by different Voices and Sounds, when their Fear, their Grief, or their Joys are ſtrong upon them? And that they do ſo, you may obſerve from evident Examples.

FOR when fierce Maſtiffs are at firſt provoked, they ſnarl, and grin, and ſhew their hard white Teeth, and threaten, in their Rage, with lower Sounds than thoſe they rend the Air with when they bark and roar aloud; but when they gently lick their Whelps with their ſoft Tongue, or toſs them with their Feet, or ſeem to bite, and fondly gape as if to eat them up, but never touch them with

Longè alio pacto gannitu vocis adulant:
Et cùm deſerti baubantur in ædibus, aut cùm
Plorantes fugiunt ſummiſſo corpore plagas.
Denique non Hinnitus item differre videtur,
Inter equas ubi Equus florenti ætate juvencus
Pinnigeri ſævit calcaribus ictus Amoris;
Et fremitum patulis ſub naribus edit ad arma:
Ac cùm ſis aliàs concuſſis artubus hinnit?
Poſtremò, genus Alituum, variæque volucres,
Accipitres, atque Oſſifragæ, Mergique marinis
Fluctibus in ſalſis victum vitamque petentes,
Longè alias alio jaciunt in tempore voces,
Et cum de victu certant, prædaque repugnant:
Et partim mutant cum tempeſtatibus unà
Rauciſonos cantus, Cornicum ut ſæcla vetuſta,
Corvorumque greges, ubi aquam dicuntur & imbreis
Poſcere, & interdum ventos auraſque vocare.
Ergo, ſi varii ſenſus Animalia cogunt,
Muta tamen cum ſint, varias emittere voces:
Quantò mortaleis magis æquum 'ſt tum potuiſſe
Diſſimileis alia, atque alia res voce notare?
Illud in his rebus tacitus ne fortè requiras:
Fulmen detulit in terras mortalibus Ignem
Primitùs: Inde omnis Flammarum diditur ardor.
Multa videmus enim cæleſtibus incita flammis
Fulgere, cùm cæli donavit plaga vapores.
Et ramoſa tamen cùm ventis pulſa vacillans
Æſtuat in ramos incumbens arboris Arbor,
Exprimitur validis extritus viribus Ignis:

with their Teeth, they ſhew their Pleaſure with a whining Voice; not ſo, as when they howl, left by themſelves at home; or when they whimper, with their crouching Bodies, to ſhun the coming Blow.

AND does not the Horſe with different Neighings fill the Air, when, hot in Blood and in the Prime of Youth, he is ſorely galled with Spurs of winged Love, and rages in his Luſt among the Mares, and, eager to engage, with open Noſtrils ſnuffs the Scent? Does not he ſhake his trembling Limbs, and neigh, for other Reaſons, with far other Sounds?

AND then, the Feather'd Race, the various kind of Birds, the Hawk, the Oſprey, and Sea-Gulls, that live and ſeek their Food in the ſalt Waves, they throw out other Notes at other times, than when they ſtrive for Food and fight for Prey; and ſome will change their hoarſe Voice according to the different Qualities of the Air; as the long-liv'd Ravens, and the Flocks of Crows, when they are ſaid to call for Rain and Showers, and ſometimes to cry for Wind and Storms. If therefore the different Perception of Things will compel theſe Creatures, mute as they are, to ſend out different Sounds, how much more reaſonable is it, that Men ſhould be able to mark out different Things by different Names?

How Fire began.

YOU may deſire, perhaps, to be ſatisfied in other Inquiries. Know then, that Thunder firſt brought down Fire to the Earth. All the Fire in this lower World is in a great meaſure derived from thence; for many Things, we obſerve, are ſet on Fire by Lightning, when the Vapours fly out from certain Quarters of the Heavens; and the Branches of Trees, preſſing hard upon one another, when they are driven backward and forward by the Winds, grow hot, and by the violent

Agitation

Et micat interdum flammaï fervidus ardor,
Mutua dum inter ſe rami ſtirpeſque teruntur:
Quorum utrumque dediſſe poteſt mortalibus Ignem.
Inde Cibum coquere, ac flammæ mollire vapore
Sol docuit, quoniam miteſcere multa videbant
Verberibus radiorum, atque æſtu victa per agros.
Inque dies magis hi victum vitamque priorem
Commutare novis monſtrabant rebus, & igni,
Ingenio qui præſtabant, & corde vigebant.
Condere cœperunt urbeis, arcemque locare
Præſidium Reges ipſi ſibi, perfugiumque:
Et pecudes, & agros diviſere, atque dedere
Pro Facie cujuſque, & Viribus, Ingenioque.
Nam Facies multùm valuit, vireſque vigebant:
Poſteriùs Res inventa 'ſt, Aurumque repertum,
Quod facilè & Validis, & Pulchris demſit honorem.
Divitioris enim ſectam plerumque ſequuntur
Quamlibet & fortes, & pulchro corpore creti.
Quòd ſiquis vera vitam ratione gubernet,
Divitiæ grandes homini ſunt, Vivere parcè
Æquo animo; neque enim'ſt unquam pœnuria Parvi:
At claros ſe homines voluere eſſe, atque potenteis,
Ut fundamento ſtabili fortuna maneret,
Et placidam poſſent Opulenti degere vitam;
Nequicquam: Quoniam ad ſummum ſuccedere honorem
Certantes, iter infeſtum fecêre viaï.
Et tamen è ſummo quaſi Fulmen dejicet ictos
Invidia interdum contemtim in Tartara tetra:

Agitation burſt out into a rapid Flame; and ſometimes the Boughs and Bodies of Trees, by rubbing together, will kindle and fly out into a Blaze. And thus Fire might be produced from either Cauſe.

BUT the Sun firſt taught Mankind to dreſs their Food, and ſoften it by Heat; for they obſerved the Fruits in the Fields grew tender and ripe by the Warmth and Power of his Rays. And ſo thoſe who had more Wit and Senſe, taught their Neighbours every Day to leave their old Diet, and their former way of Life, to enter upon a new Courſe, and uſe the Benefit of Fire.

The Diviſion of Lands.

AND now their Kings began to build Cities, and to raiſe Caſtles, as a Defence to themſelves, and Refuge in Time of Danger. They divided the Cattle and the Fields, and gave to every one as he excelled in Beauty, in Strength and Underſtanding; for Beauty and Strength were then in great Repute, and bore away the Prize. At laſt Riches and Gold were found out, which ſoon took away the Honour from the Strong and Beautiful; even the Brave and the Beautiful themſelves commonly follow the Faction of the Rich.

BUT if Men would govern their Lives by the Rule of true Reaſon [u], to live upon a little with an even Mind, would be the greateſt Riches. This Little no Man can fear to want; but Men ſtrive to be renowned and powerful, that their Fortune may ſtand firm upon a laſting Foundation, and the Wealthy cannot fail to live at Eaſe. All abſurd! for thoſe who labour to reach the higheſt Honours, make a very unhappy Journey in the End: Envy, like a Thunderbolt, ſtrikes them from the Pinnacle of their Glory, and tumbles them down with Scorn into an Abyſs of Miſery. So that it

[u] Who that reads theſe Lines can believe, that *Epicurus* was an *Epicure?* He believes that a wiſe Man cannot be poor, becauſe he lives content with what he has, and thinks it enough, though it be but a little.

is

Ut ſatiùs multò jam ſit parere quietum,
Quàm regere Imperio res velle, & Regna tenere.
Proinde, ſive incaſsùm defeſſi ſanguine ſudent
Anguſtum per iter luctantes Ambitionis:
Invidia quoniam ſeu Fulmine ſumma vaporant
Plerumque, & quæ ſunt aliis magis edita cunque:
Quandoquidem ſapiunt alieno ex ore: petuntque
Res ex auditis potiùs, quàm ſenſibus ipſis:
Nec magis id nunc eſt, nec erit mox, quàm fuit antè.
Ergo Regibus occiſis ſubverſa jacebat
Priſtina majeſtas ſoliorum, & ſceptra ſuperba;
Et capitis Summi præclarum Inſigne cruentum
Sub pedibus Volgi magnum lugebat honorem:
Nam cupidè conculcatur nimis antè metutum.
Res itaque ad ſummam Fæcem Turbaſque redibat,
Imperium ſibi cùm, ac ſummatum quiſque petebat.
Inde Magiſtratum partim docuere creare,
Juraque conſtituêre. ut vellent legibus uti:
Nam genus Humanum defeſſum vi colere ævum,
Ex inimicitiis languebat; quò magis ipſum
Sponte ſua cecidit ſub leges, arctaque jura:
Acriùs ex Ira quòd enim ſe quiſque parabat
Ulciſci, qnàm nunc conceſſum'ſt Legibus æquis;
Hanc ob rem'ſt Homines pertæſum vi colere ævum:
Unde Metus maculat pœnarum præmia vitæ.
Circumretit enim Vis atque Injuria quemque,
Atque, unde exorta'ſt, ad eum plerumque revertit;
Nec facile'ſt placidam ac pacatam degere vitam,
Qui violat factis communia fœdera pacis.

Etſi

is much ſafer, as a Subject, to obey, than to wiſh for Empire and to govern Kingdoms. Let thoſe that will tire themſelves in vain, and ſpend their Blood and their Sweat in climbing the narrow Track of Ambition (for the Higheſt of them all are blaſted with Envy, as with a Thunderbolt; and the higher they are, they are the more expoſed) ſince they depend wholly upon others for their Wiſdom, and try Things more by their Ears than by their Underſtanding. This is the preſent Caſe; it always was ſo, and ever will be.

Those Kings then being ſlain, the former Majeſty of their Thrones, and their proud Scepters, were laid in the Duſt; and the Diadem, the noble Ornament of Kings, all ſtained with Blood, is now trodden by vulgar Feet, and weeps over its expiring Honours; for we eagerly ſpurn at what we too much feared before.

The Government now returned to the Rabble, and the very Dregs of the People; whilſt every one reached at Empire, and the Supreme Power for himſelf. And therefore the Wiſeſt among them taught the reſt to ſettle a Magiſtracy, and to eſtabliſh Laws, by which they would be governed. Men grew weary of living in a State of Force, and were worn out with continual Bickering among themſelves, and therefore, of their own accord, more readily fell under the Power of Laws and the Bonds of Juſtice; for every one, in his Reſentment, perſued his Revenge with more Violence than the Equity of the Laws would now allow him, and therefore Men were tired of this hoſtile way, which ſoured all their Pleaſures of Life with the Fears of Puniſhment; for Force and Wrong intangle the Man that uſes them, and commonly recoil upon the Head that contrived them. Nor is it eaſy for that Man to live a ſecure and pleaſant Life, who by his Conduct breaks through the common *Republicks.*

mon

Etſi fallit enim Divûm genus Humanumque,
Perpetuò tamen id fore clam diffidere debet:
Quippe ubi ſe multi per Somnia ſæpe loquentes,
Aut Morbo delirantes procrâxe ferantur,
Et celata diu in medium peccata dediſſe.
Nunc quæ cauſa Deûm per magnas Numina genteis
Pervolgârit, & ararum compleverit urbeis,
Suſcipiendaque curârit ſollennia ſacra,
" *Quæ nunc in magnis florent ſacra rebu' lociſque:*
Unde etiam nunc eſt Mortalibus inſitus Horror,
Qui delubra Deûm nova toto ſuſcitat orbi
Terrarum, & feſtis cogit celebrare diebus:
Non ita difficile'ſt rationem reddere verbis.
Quippe etenim jam tum Divûm Mortalia ſæcla
Egregias animo facies vigilante videbant,
Et magis in ſomnis mirando corporis auctu.
His igitur ſenſum tribuebant, propterea quod
Membra movere videbantur, voceſque ſuperbas
Mittere pro facie præclara, & viribus amplis:
Æternamque dabant vitam, quia ſemper eorum
Suppeditabatur facies, & forma manebat,
(Et manet omnino) & quòd tantis viribus auctos
Non temere ulla vi convinci poſſe putabant.
Fortuniſque ideo longè præſtare putabant
Quòd mortis timor haud quemquam vexaret eorum,
Et ſimul in ſomnis quia multa, & mira videbant
Efficere, & nullum capere ipſos inde laborem.
Præterea, Cœli rationes ordine certo,
Et varia annorum cernebant tempora verti;

Nec

mon Bonds of Peace: Though he has the Cunning to deceive both *Gods* and Men, his Heart always trembles for fear of being diſcover'd; for Men often talk in their Sleep, and are ſaid to reveal Things when they are delirious by a Diſeaſe, and to bring to Light their Plots that had been long concealed.

AND now I'll ſhew the Cauſe that firſt diſperſed the Notions of the *Gods* throughout the World, and filled the Towns with Altars, and ordered ſolemn Rites to be performed, and holy Ceremonies now in Uſe, when Victims ſmoke on every ſacred Fire; and whence that fixed Horror in the Minds of Men, that builds new Temples to the *Gods* in every Corner of the Earth, and compels Men to celebrate their Feſtivals: 'Tis not ſo hard a Thing to ſhew the Cauſe.

FOR Men, in the Beginning of the World, were uſed to ſee divine and glorious Forms, even when awake; and in their Sleep thoſe Images appeared in more majeſtick State, and raiſed their Wonder. And theſe they thought had Senſe. They fancy'd that they moved their Limbs, and ſpoke proud Words, ſuitable to the grand Appearance they ſhew'd, and to the Mightineſs of their Strength. They aſcribed Eternity to them, becauſe a conſtant Stream of Images inceſſantly came on, in Form the ſame (that could not change) and then, they could not die, becauſe no Power, they thought, could cruſh Beings ſo ſtrong in Force, ſo large in Size: And they thought them infinitely happy, becauſe they were never vexed with the Fears of Death; and likewiſe in their Dreams they ſaw them do Things ſtrange and wonderful, with Eaſe, and without Fatigue.

BESIDES, they obſerved the Motions of the Heavens were regular and certain, that the various Seaſons of the Year came orderly about, but

Nec poterant quibus id fieret cognoſcere cauſis:
Ergo perfugium ſibi habebant omnia Divis
Tradere, & illorum nutu facere omnia flecti.
In Cœloque Deûm ſedes, & templa locârunt,
Per cœlum volvi quia Sol, & Luna videntur:
Luna, Dies, & Nox, & noctis Signa ſevera,
Noctivageque faces cœli, Flammæque volantes,
Nubila, Ros, Imbres, Nix, Venti, Fulmina, Grando,
Et rapidi fremitus, & murmura magna minarum.
O genus infelix humanum! talia Divis
Cùm tribuit facta, atque iras adjunxit acerbas:
Quantos tum gemitus Ipſi ſibi, quantaque nobis
Volnera; quas lacrymas peperêre minoribu' noſtris!
Nec Pietas ulla'ſt velatum ſæpe videri
Vertier ad Lapidem, atq; omneis accedere ad aras;
Nec procumbere humi proſtratum, & pandere palmas
Antè Deûm delubra, nec aras ſanguine multo
Spargere quadrupedum, nec votis nectere vota:
Sed magè pacata poſſe omnia mente tueri.
Nam cùm ſuſpicimus magni cœleſtia mundi
Templa ſuper, ſtelliſque micantibus æthera fixum,
Et venit in mentem Solis, Lunæque viarum,
Tunc aliis oppreſſa malis in pectore cura
Illa quoque expergefactum caput erigere infit,
Ecquæ fortè Deûm nobis immenſa poteſtas
Sit vario motu quæ candida ſidera verſet.
Tentat enim dubiam mentem rationis egeſtas,
Ecquænam fuerit Mundi genitalis origo:

could diſcover nothing of the Cauſes of theſe Revolutions, and therefore they had this Reſort; they aſcribed every thing to the Power of the *Gods*, and made every thing depend upon their Will and Command.

The Habitation and Abode of theſe *Gods* they placed in the Heavens, for there they ſaw the Sun and Moon were rolled about; the Moon, I ſay, they obſerved there, and the Day and the Night, and the Stars ſerenely bright, and the blazing Meteors wandering in the Dark, the flying Lightning, the Clouds, the Dew, the Rain, the Snow, the Thunder, the Hail, the dreadful Noiſes, the Threatnings and loud Roarings of the Sky.

Unhappy Race of Men! to aſcribe ſuch Events, to charge the *Gods* with ſuch diſtracted Rage. What Sorrow have they brought upon themſelves? What Miſeries upon us? What Floods of Tears have they intailed upon our Poſterity?

Nor can there be any Piety for a Wretch with his Head veiled, to be ever turning himſelf about towards a Stone, to creep to every Altar, to throw himſelf flat upon the Ground, to ſpread his Arms before the Shrines of the *Gods*, to ſprinkle the Altars abundantly with the Blood of Beaſts, and to heap Vows upon Vows. To look upon Things with an undiſturbed Mind, this is Piety; for when we behold the celeſtial Canopy of the great World, and the Heavens ſpread over with ſhining Stars; when we reflect upon the Courſes of the Sun and Moon; then Doubts, that before lay quiet under a Load of other Evils, begin to awake, and grow ſtrong within us. What! are there *Gods* endued with ſo great Power, that can direct the various Motions of all the bright Luminaries above? for the Ignorance of Cauſes gives great Uneaſineſs to the doubting Mind of Man. And hence we doubt

Et ſimul, ecquæ ſit finis, quoad mœnia Mundi,
Et tanti motus hunc poſſint ferre laborem:
An Divinitus æterna donata ſalute,
Perpetuo poſſint ævi labentia tractu,
Immenſi validas ævi contemnere vireis.
Præterea, cui non animus formidine Divûm
Contrahitur? cui non conrepunt membra pavore,
Fulminis horribili cùm plaga torrida Tellus
Contremit, & magnum percurrunt Murmura cœlum?
Non Populi, Genteſque tremunt? Regeſque ſuperbi
Conripiunt Divûm perculſi membra timore,
Ne quod ob admiſſum fœdè, dictumve ſuperbè
Pœnarum grave ſit ſolvendi tempus adactum?
Summa etiam cum vis violenti per mare venti
Induperatorem claſſis ſuper æquora verrit,
Cum validis pariter Legionibus, atque Elephantis:
Non Divûm pacem votis adit? ac prece quæſit
Ventorum pavidus paces, animaſque ſecundas?
Nequicquam: quoniam violento turbine ſæpe
Conreptus nihilo fertur minùs ad vada lethi:
Uſqueadeo res humanas Vis abdita quædam
Obterit, & pulchros Faſceis, ſævaſque Secureis
Proculcare, ac ludibrio ſibi habere videtur.
Denique ſub pedibus Tellus cùm tota vacillat,
Concuſſæque cadunt urbes, dubiæque minantur:
Quid mirum ſi ſe temnunt Mortalia ſæcla?
Atque poteſtates magnas, miraſque relinquunt
In rebus vireis Divûm, quæ cuncta gubernent?

whether the World had a Beginning, and ſhall ever have an End; how long the Heavens (the Walls of this World) ſhall be able to bear the Fatigue of ſuch mighty Motions, or whether they are made Eternal by the *Gods*, and ſo ſhall for ever roll on, and deſpiſe the ſtrong Power of devouring Age.

BESIDES, what Heart does not faint with a Dread of the *Gods?* Whoſe are the Limbs that will not ſhrink, when the ſcorch'd Earth quakes with the horrible Stroke of Lightning, and the roaring Thunder ſcours over the whole Heavens? Do not the People and the Nations ſhake? and proud Tyrants, ſtruck with Fear of thoſe avenging Powers, tremble every Limb, leſt the diſmal Day were come, to puniſh them for the Baſeneſs of their Crimes, and the Arrogance of their Speeches? And when the raging Force of a violent Storm upon the Sea, toſſes the Admiral of a Fleet over the Waves, with all his Elephants and his ſtout Legions about him, does not He fall to praying to the *Gods* for Pity? and, trembling upon his Knees, begs a Peace of the Winds, and a proſperous Gale? In vain! for He is often ſnatched up by the Violence of the Hurricane, and carried with all his Devotion to the *Stygian* Ferry. With ſuch Contempt does ſome hidden Power continually trample upon human Greatneſs; it treads with Scorn upon the gaudy Rods, and the cruel Axes, thoſe Enſigns of Empire, and makes a Sport with them.

AND then, when the whole Earth reels under our Feet, and the Cities are ſhaken, and tumble about us, or at leaſt threaten to fall; what wonder if Men, at ſuch a time, deſpiſe their own weak ſelves, and aſcribe infinite Power and irreſiſtible Force to the *Gods*, by which they direct and govern the World?

Quod ſupereſt, Æs, atque Aurum, Ferrumque repertu'ſt,
Et ſimul argenti pondus, Plumbique poteſtas:
Ignis ubi ingenteis ſylvas ardore cremârat
Montibus in magnis, ſeu cœli fulmine miſſo,
Sive quòd inter ſe bellum ſylveſtre gerentes,
Hoſtibus intulerant ignem formidinis ergo;
Sive quòd inducti Terræ bonitate, volebant
Pandere agros pingueis, & paſcua reddere rura:
Sive Feras interficere, & diteſcere præda:
Nam Fovea, atque Igni priùs eſt venarier ortum,
Quàm ſepire Plagis ſaltum, Canibuſque ciere.
Quicquid id eſt, quacunque è cauſa flammeus ardor
Horribili ſonitu ſylvas exederat altis
Ab radicibus, & terram percoxerat igni,
Manabat venis ferventibus in loca terræ
Concava conveniens Argenti rivus & Auri,
Æris item & Plumbi; quæ cùm concreta videbant
Poſteriùs claro in terris ſplendere colore,
Tollebant nitido capti, levique lepore:
Et ſimili formata videbant eſſe figura,
Atque lacunarum fuerant veſtigia cuique,
Tum penetrabat eos, poſſe hæc liquefacta calore,
Quamlibet in formam, & faciem decurrere rerum,
Et prorſum quamvis in acuta ac tenuia poſſe
Mucronum duci faſtigia procudendo;
Ut ſibi tela parent, ſylvaſque excidere poſſint,
Materiem lævare, dolare, ac radere tigna,
Et terebrare etiam, ac pertundere, perque forare.
Nec minùs Argento facere hæc Auroque parabant,
Quàm validi primùm violentis viribus Æris:
Nequicquam: Quoniam cedebat victa poteſtas,
Nec poterat pariter durum ſufferre laborem.
Nam fuit in pretio magis Æs, Aurumque jacebat

AND laſt of all Braſs, and Gold, and Iron, were diſcovered; and the Value of Silver, and the Weight of Lead. For when whole Foreſts upon the high Hills were conſumed by Fire, whether it came by Lightning from the Heavens, or Men carried on a War among themſelves in the Woods, and ſet them in a Blaze to terrify their Enemies; or whether, induced by the Goodneſs of the Soil, they reſolved to inlarge their fruitful Fields, and make Paſtures for their Cattle; or whether it was to deſtroy the wild Beaſts, and inrich themſelves with their Spoils (for the firſt way of taking the Game was, by Pit-falls, and Fire before they ſurrounded the Brakes with Nets, or hunted with Dogs); however it was, or whatever was the Cauſe of this raging Fire, that burnt up the Woods to the very Roots, with frightful Noiſe, and ſet the Earth a boiling with its Heat: Then Streams of Silver and Gold, of Braſs and of Lead, flowed out of the burning Veins into hollow Places of the Earth, that were proper for them. And when the Metal grew hard, and Men obſerved it looking beautifully and ſhining bright upon the Ground, they were charmed with its gay and ſparkling Luſtre, and dug it up; and finding it received the exact Shape of the hollow Moulds in which it lay, they concluded, when it was melted by the Heat, it would run into any Form and Figure they pleaſed, and they might draw it into a ſharp Point or a fine Edge, and make themſelves Tools to cut down the Woods, to ſmooth, to ſquare, and to plane Timber, to pierce, to hollow, and to bore. Theſe Inſtruments they attempted to make of Silver and Gold, no leſs, than by powerful Blows to form the ſtronger Braſs; but in vain! for the ſoft Quality of thoſe Metals gave way, and could not bear the Force and Violence of the Stroke; and ſo Braſs was in moſt

Propter inutilitatem hebeti mucrone retuſum,
Nunc jacet Æs, Aurum in ſummum ſucceſſit honorem:
Sic volvenda ætas commutat tempora rerum,
Quod fuit in pretio, fit nullo denique honore:
Porro aliud ſuccedit, & è contemtibus exit,
Inque dies magis appetitur, floretque repertum
Laudibus, & miro'ſt mortaleis inter honore.
Nunc tibi quo pacto Ferri natura reperta
Sit, facile'ſt ipſum per te cognoſcere, Memmi,
Arma antiqua, Manus, Ungues, Denteſq; fuerunt,
Et Lapides, & item ſylvarum fragmina Rami,
Et Flammæ, atque Ignes poſtquam ſunt cognita primum:
Poſterius Ferri vis eſt, Æriſque reperta:
Et prior Æris erat quàm Ferri cognitus uſus:
Quò facilis magis eſt natura, & copia major.
Ære ſolum terræ tractabant, Æreque belli
Miſcebant fluctus, & volnera vaſta ſerebant,
Et pecus, atque agros adimebant: Nam facilè ollis
Omnia cedebant armatis nuda & inerma.
Inde minutatim proceſſit Ferreus enſis,
Verſaque in opprobrium ſpecies eſt Falcis ahenæ,
Et Ferro cæpere ſolum proſcindere terræ;
Exæquataque ſunt creperi certamina belli.
Et prius eſt reppertum in Equi conſcendere coſtas,
Et moderarier hunc frænis dextraque vigere;
Quàm Bijugo curru belli tentare pericla:
Et bijugo prius eſt, quàm bis conjungere Binos,
Et quàm falciferos inventum aſcendere Currus.
Inde boves Lucas turrito corpore tetros

Anguimanos

Value, and Gold was neglected, as a blunt, uſeleſs Metal, that would not hold an Edge. But now Braſs is in no Eſteem, and Gold ſucceeds to all its Honours. And thus a Courſe of flowing Time changes the Dignity of Things: What was highly prized is now treated with Contempt, and what was deſpiſed comes into its Place, and is every Day more eagerly perſued; is cried up with the greateſt Applauſe, and receives the Reſpect and Admiration of Mankind.

And now, my *Memmius*, you may eaſily, of yourſelf, perceive by what means the Force of Iron was diſcovered. The firſt Weapons were Hands, and Nails, and Teeth, and Stones, and the broken Boughs of Trees; and then they learnt to fight with Fire and Flame; and afterwards was the Strength of Iron and Braſs found out. But the Uſe of Braſs was known before the Benefit of Iron was underſtood; for it was a Metal more eaſy to work, and in greater Plenty. With braſen Shares they ploughed the Ground, with Arms of Braſs they carried on the Rage of War, and dealt deep Wounds about, and ſeized upon their Neighbours Cattle and their Fields; for every thing naked and unarmed was eaſily forced to give way. But the iron Sword came gradually into Uſe, and Inſtruments of Braſs were laid aſide with Contempt. And now they began to plough with Iron, and with Weapons of Iron to engage in the doubtful Events of War.

And Men firſt learnt to mount the Horſe, with their Left Hand to manage the Reins, and they fought with their Right, before they tried the Dangers of War in a Chariot drawn by Two. They firſt uſed a Chariot with a Pair, and then they harneſſed Four, before they knew how to engage in Chariots armed with Scythes. The *Carthaginians* taught the *Lybian* Elephants, with their ſerpentine Proboſcis and

Anguimanos belli docuerunt volnera Pœni
Sufferre, & magnas Martis turbare catervas.
Sic alid ex alio peperit Diſcordia triſtis,
Horribile humanis quod gentibus eſſet in armis:
Inque dies belli terroribus addidit augmen.
Tentârunt etiam Tauros in mœnere belli,
Expertique Sues ſævos ſunt mittere in hoſteis;
Et validos Parthi præ ſe miſere Leones
Cum ductoribus armatis, ſæviſque magiſtris,
Qui moderarier hos poſſent, vincliſque tenere;
Nequicquam: Quoniam permiſta cæde calentes
Turbabant ſævi nullo diſcrimine turmas,
Terrificas capitum quatientes undique criſtas;
Nec poterant Equites fremitu perterrita equorum
Pectora mulcere, & frænis convertere in hoſteis.
Inritata Leæ jaciebant corpora ſaltu
Undique, & advorſum venientibus ora petebant:
Et nec-opinanteis à tergo diripiebant,
Deplexæq; dabant in terram volnere vinctos:
Morſibus adfixæ validis, atque unguibus uncis.
Jactabantque Sues Tauri, pedibuſque terebant;
Et latera, ac ventres hauribant ſubter equorum
Cornibus, ad terramque minanti mente ruebant.
At validis ſocios cædebant dentibus Apri,
“ *Tela infracta ſuo tinguentes ſanguine ſævi:*
“ *In ſe fracta ſuo tinguentes ſanguine tela:*
Permiſtaſque dabant equitum peditumque ruinas.
Nam tranſverſa feros exibant dentis adactus
Jumenta, aut pedibus ventos erecta petebant:
Nequicquam: Quoniam à nervis ſucciſa videres
Concidere, atque gravi terram conſternere caſu.

and Towers upon their Backs, to bear the Smart of Wounds, and to diſorder the embattled Ranks of the Enemy. And thus the Rage of Diſcord found out one Art of Slaughter after another, as the dreadful Scourges of Mankind, and increaſed the Terrors of War every Day. They tried the Fury of Bulls in their Battles, and drove Boars againſt their cruel Enemies. The *Parthians* placed roaring Lions before their Ranks, with their armed Keepers, and fierce Leaders, to govern their Rage and hold them in Chains: In vain! for growing hot with the mixed Blood they had taſted, they broke in their Fury through the Troops of Friends and Enemies without Diſtinction, ſhaking their dreadful Manes on every Side. Nor could the Horſemen cool their frighted Horſes, diſtracted with the Roaring of the Beaſts, or turn them with the Reins againſt the Foe. The Lions with Rage ſprung out, and threw their Bodies every way, and flew upon the Faces that they met; others they ſuddenly fell on behind, and claſped within their Paws, and with ſore Wounds o'ercome, they flung them to the Ground, and held them down with their ſtrong Teeth, and with their crooked Claws. The Bulls would toſs the Boars, and cruſh them with their Feet, and with their Horns would gore the Sides and Bellies of the Horſes, and in their Rage bear them to the Earth. The Bears with their ſtrong Teeth deſtroyed their Friends (and cruelly ſtained the Darts unbroken, with their Maſter's Blood, the Darts that broke upon themſelves were ſtained with their own) and brought confuſed Ruin upon Man and Horſe; for though the Horſe, by leaping aſide, would ſtrive to fly the cruel Biting of their Teeth, or, rearing up, paw'd with their Feet the yielding Air; yet all in vain! you would ſee them, hamſtrung by the Beaſts, fall down, and with their heavy Weight would ſhake the

Ground.

Sic, quos antè domi domitos ſatis eſſe putabant,
Efferviſcere cernebant in rebus agundis,
Volneribus, clamore, fuga, terrore, tumultu:
Nec poterant ullam partem redducere eorum.
Diffugiebat enim varium genus omne ferarum:
Ut nunc ſæpe boves Lucæ ferro malè mactæ
Diffugiunt, fera facta ſuis cùm multa dedere.
Sic fuit, ut facerent: Sed vix adducor, ut antè
Non quierint animo præſentire, atque videre,
Quàm commune malum fuerat, fædumq; futurum.
Et magis id poſſis factum contendere in Omni,
In variis mundis varia ratione creatis,
Quàm certò atq; uno terrarum quolibet Orbi.
Sed facere id non tam vincendi ſpe voluerunt,
Quam dare quod gemerent hoſtes, ipſique perire,
Qui numero diffidebant, armiſque vacabant.
Nexilis antè fuit veſtis, quàm Textile tegmen:
Textile poſt ferrum'ſt: quia ferro tela parantur:
Nec ratione alia poſſunt tam lævia gigni
Inſilia, ac fuſi, & radii, ſcapique ſonantes.
Et facere antè Viros lanam Natura coëgit,
Quàm Muliebre genus, nam longè præſtat in arte,
Et ſollertius eſt multò genus omne Virile:
Agricolæ donec vitio vertere ſeveri,
Ut Muliebribus id manibus concedere vellent,
Atque ipſi potiùs durum ſufferre laborem:
Atque opere in duro durarent membra, manuſque.

Ground. Theſe Creatures therefore that Men ſaw were tame at home, now brought into the Wars grew mad with Wounds, with Noiſe, with Flying, with Terror, and the Tumult of the Battle; nor could they by any means be brought back or cool'd again, but every kind flew wildly o'er the Plains; as when a Bull, not rightly ſtruck by the Prieſt's ſacrificing Axe, breaks looſe, after much Miſchief done to all about him. Theſe were the firſt Arts of War; yet I cannot believe but the firſt Inventors muſt conſider and foreſee the common Evils and ſad Calamities they muſt occaſion. This, it is ſafer to ſay, was the Caſe in general in ſome of all the Worlds that were created in various Manners, than to be particular and fix it upon One only. But they made Uſe of Beaſts in their Wars, not ſo much from a Hope of Victory, as to annoy and torment their Enemies; being themſelves ſure to die, becauſe they diſtruſted their Numbers, and were unſkilled in the Uſe of Arms.

THEIR Garments were the Skins of Beaſts, pinn'd together with Thorns, before they had learned to weave. The Art of Weaving came in after the Diſcovery of Iron, for their Tools were made of that Metal; nor could the ſmooth Treadles, the Spindles, the Shittles, and the rattling Beams be formed any other way. But Nature at firſt compelled the Men to Card and Spin, before the Women undertook the Trade; for Men by far exceed the other Sex in the Invention of Arts, and work with greater Skill. The ſturdy Peaſants at length reproached theſe Male Spinſters, and obliged them to give up the Buſineſs into the Women's Hands; and then they betook themſelves to more laborious Employments, and harden'd their Limbs and their Hands with rougher Work.

BUT

At ſpecimen Sationis, & Inſitionis origo
Ipſa fuit rerum primùm Natura creatrix.
Arboribus quoniam baccæ, glandeſque caducæ
Tempeſtiva dabant pullorum examina ſubter.
Unde etiam libitum'ſt ſtirpeis committere ramis:
Et nova defodere in terram virgulta per agros:
Inde aliam, atque aliam culturam dulcis agelli
Tentabant, fructuſque feros manſueſcere terra
Cernebant indulgendo, blandèque colendo.
Inque dies magis in montem ſuccedere ſylvas
Cogebant, infraque locum concedere cultis:
Prata, Lacus, Rivos, Segetes, Vinetaque læta
Collibus, & campis ut haberent, atque olearum
Cærula diſtinguens inter plaga currere poſſet
Per tumulos, & convalleis, campoſque profuſa:
Ut nunc eſſe vides vario diſtincta lepore
Omnia, quæ pomis interſita dulcibus ornant:
Arbuſtiſque tenent felicibus obſita circùm.
At liquidas avium voces imitarier ore
Antè fuit multò, quàm lævia carmina Cantu
Concelebrare homines poſſent, aureiſque juvare.
Et Zephyri cava per calamorum ſibila primum
Agreſteis docuere cavas inflare cicutas,
Inde minutatim dulceis didicere querelas,
Tibia quas fundit digitis pulſata canentum,
Avia per nemora, ac ſylvas ſaltuſque reperta,
Per loca paſtorum deſerta, atque otia dia:
Sic unum quicquid paullatim protrahit Ætas
In medium, Ratioque in luminis eruit oras.
Hæc animos ollis mulcebant atque juvabant

Cum

But Nature herſelf (the great Mother of all Things) firſt taught Men to Sow and to Graft; for the Berries and the Acorns that fell from the Trees, they obſerved, produced young Shoots underneath, in a proper Seaſon of the Year: And hence they began to graft fruitful Slips into the Boughs, and to plant young Stocks over all the Fields. Then they tried every other Art to improve the kindly Soil; and they found the wild Fruits grew ſweet and large, by inriching the Earth, and dreſſing it with greater Care. They employed themſelves continually in reducing the Woods to narrower Bounds upon the Hills, and to cultivate the lower Places for Corn and Fruits. Thus they had the Benefit of Meadows, of Lakes, of Rivers, of Corn Fields, and pleaſant Vineyards, upon the Side of the Hills, and in the Dales; and of green Rows of Olives, regularly running between upon the riſing Grounds, and in the Valleys, and ſpread over all the Plains: As you ſee our Country Farms now laid out in all the Variety of Beauty, where the ſweet Apples are intermixed, and adorn the Scene, and fruitful Trees are delightfully planted round all the Fields.

And Men attempted to imitate by the Mouth the charming Voice of Birds, before they tried to Sing, or to delight the Ear with tuneful Verſe: And the ſoft Murmurs of the Reeds, moved by a gentle Gale, firſt taught them how to blow the hollow Reed, and by degrees to learn the tender Notes; ſuch as the Pipe, by nimble Fingers preſſed, ſends out when ſweetly ſung to; the Pipe, that now is heard in all the Woods and Groves, and all the Lawns, where Shepherds take their ſolitary Walks, and ſpend their Days in Innocence and Eaſe. Thus Time by degrees draws every thing into Uſe, and Skill and Ingenuity raiſe it to Perfection. Thus Muſick ſoftned and relieved

Cum ſatiate cibi: nam tum ſunt omnia cordi.
Sæpe itaque inter ſe proſtrati in gramine molli
Propter aquæ rivum, ſub ramis arboris altæ.
Non magnis opibus jucundè corpora habebant:
Præſertim cum tempeſtas ridebat, & anni
Tempora pingebant viridanteis floribus herbas,
Tum Joca, tum Sermo, tum dulces eſſe Cachinni
Conſuerant: agreſtis enim tum Muſa vigebat:
Tum caput, atque humeros plexis redimire coronis,
Floribus, & foliis laſcivia læta monebat:
Atque extra numerum procedere membra moventeis
Duriter, & duro terram pede pellere matrem:
Unde oriebantur Riſus, dulceſque Cachinni,
Omnia quod nova tum magis hæc, & mira vigebant.
Et vigilantibus hinc aderant ſolatia ſomni,
Ducere multimodis voces, & flectere cantus;
Et ſupera calamos unco percurrere labro:
Unde etiam vigiles nunc hæc accepta tuentur,
Et numerûm ſervare genus didicere; neque hilo
Majorem interea capiunt dulcedini' fructum,
Quàm Sylveſtre genus capiebat Terrigenarum.
Nam quod adeſt præſto, niſi quid cognovimus antè
Suavius, in primis placet, & pollere videtur;
Poſteriorque ferè melior res illa reperta
Perdit, & immutat ſenſus ad priſtina quæque.
Sic odium cœpit Glandis: ſic illa relicta
Strata Cubilia ſunt herbis, & frondibus aucta.
Pellis item cecidit, veſtis contempta Ferina'ſt,
Quam reor invidia tali tunc eſſe repertam;

Ut


P Mignard pinx
L. du Guernier sculp
Lib. 6

relieved the Minds of theſe rude Swains, after their rural Feaſts; for then the Heart's at Eaſe; and then they ſweetly indulge their Bodies, as they lie together on the ſoft Graſs, hard by a River's Side, under the Boughs of ſome high Tree, without a Heap of Wealth. Chiefly when the Spring ſmiles, and the Seaſon of the Year ſprinkles the verdant Herbs with flowery Pride; then Jeſts, and ſmart Conceits, and the loud Laugh went round; and then the ruſtick Muſe ſung out, and, gay and jocund in their Sports, they crowned their Heads, and on their Shoulders hung Garlands of Flowers and Leaves, and with unequal Steps they rudely moved their Limbs, and ſhook their Mother *Earth* with their hard Feet; and then the Laugh began, and pleaſant Grin, at theſe ſtrange Gambols, never ſeen before. And thus they kept awake; and, as refreſhed by comfortable Sleep, they ſpent the Night in trolling Country Songs, and making Mouths to many an aukward Tune, and running o'er the Reeds with crooked Lip. Theſe are the Pleaſures now our wanton Youth perſue, who ſit up all the Night; they learn to dance in meaſure, but receive no more Delight than did that ruſtick Race of Earth-born Swains ſo long ago.

For while we know no better, and enjoy a preſent Good, it wonderfully pleaſes and delights us above all Things; but when we diſcover ſomething more agreeable, this deſtroys and changes the Reliſh of what went before. So Acorns became odious to the Palate; and the Beds of Graſs and Leaves were laid aſide; and Skins went out of Uſe, and that ſavage ſort of Cloathing was deſpiſed; and yet [x], I think, he that firſt wore it

[x] *Faber* ſays, that the firſt Garment, though a worthleſs undreſſed Skin of a Beaſt, ſo pleaſed theſe Earth-born Men, that it was the Cauſe of his Death who firſt invented and wore it.

Ut lethum inſidiis, qui geſſit primus, obiret :
Et tandem inter eos diſtractum, ſanguine multo
Diſperſiſſe, neque in fructum convertere quîſſe.
Tunc igitur Pelles, nunc Aurum, & Purpura curis
Exercent hominum vitam, belloque fatigant.
Quò magis in nobis (ut opinor) culpa reſidit.
Frigus enim nudos ſine Pellibus excruciabat
Terrigenas : at nos nil lædit veſte carere
Purpurea, atque Auro, ſigniſque ingentibus apta ;
Dum Plebeia tamen ſit, quæ defendere poſſit :
Ergo hominum genus incaſſum, fruſtraque laborat,
Semper & in curis conſumit inanibus ævum ;
Nimirum, quia non cognovit, quæ ſit habendi
Finis, & omnino quoad creſcat vera voluptas :
Idque minutatim vitam provexit in Altum,
Et belli magnos commovit funditus æſtus.
At vigiles mundi magnum & verſatile templum
Sol & Luna ſuo luſtrantes lumine circùm
Perdocuere homines Annorum tempora verti :
Et certa ratione geri rem, atque ordine certo.
Jam validis ſepti degebant Turribus ævum,
Et diviſa colebatur, diſcretaque tellus.
Tum Mare velivolum florebat navibu' pandis :
Auxilia, & ſocios jam pacto fœdere habebant :
Carminibus cùm res geſtas cœpêre Poetæ
Tradere : nec multò priù' ſunt Elementa reperta.
Propterea quid ſit priùs actum reſpicere ætas
Noſtra nequit, niſi quà ratio veſtigia monſtrat.

Navigia,

raiſed ſuch Envy to himſelf, that he was treacherouſly ſlain, he was torn to Pieces, and his leathern Garment ſtained with his own Blood, nor was he ſuffer'd to enjoy the Fruit of his own Invention.

AT that time Men fought for Skins, but now Gold and Purple employ their Cares, and ſet them together by the Ears: And, I think, we are much more to blame of the two; for without the Uſe of Skins, the Cold would have been very grievous to thoſe Earth-born Wretches; but we ſuffer nothing, if we go without Purple or Cloth of Gold, embroider'd in the richeſt Figures, ſince a meaner Dreſs would as well ſecure us againſt the Cold.

WRETCHED therefore, and vain, are the Troubles of Mankind; they ſpend their whole Life in the Perſuit of empty Cares; and no wonder, ſince they fix no Limits to what they poſſeſs, and know nothing how far the Bounds of true Pleaſure may extend: And this Ignorance carries them by degrees into a Sea of Evils, and raiſes the moſt violent Storms of War throughout the World.

BUT the wakeful Sun and Moon, ſurveying with their Light the great and rolling Skies, have taught Men, that the Seaſons of the Year are turned about, and that Things are carried on by certain Rules, and in a fixed Order.

AND now Mankind incloſed themſelves and lived in Caſtles; the Lands were parted out, and each enjoyed his own; the Sea was ſailed o'er by crooked Ships, and Men joined together for Defence, and formed Alliances by certain Bonds. The Poets then began to celebrate in Verſe the great Exploits, and Letters were not long before diſcover'd. What was tranſacted many Ages paſt, thoſe Times knew nothing of, but what their Reaſon darkly traced out.

Navigia, atque Agri culturas, Mœnia, Leges,
Arma, Vias, Veſteis, & cætera de genere horum,
Præmia, delicias quoque vitæ funditus omneis,
Carmina, Picturas, & dædala ſigna polire,
Uſus, & impigræ ſimul Experientia mentis
Paullatim docuit pedetentim progredientes.
Sic unum quicquid paullatim protrahit ætas
In medium, ratioque in luminis eruit oras.
Namque alid ex alio clareſcere corde videmus
Artibus, ad ſummum donec venêre cacumen.

USE therefore, and the Experience of an enquiring Mind, led Men by degrees into the Knowledge of Navigation, of Agriculture; taught them to build Walls, to make Laws, Arms, Publick Ways, Garments, and other Things of the ſame nature; made them acquainted with Poetry, Painting, and Statuary. Thus Time gradually produces every thing into Uſe, and Reaſon ſhews it in a clear Light: One Art, we obſerve, is refined and poliſhed by another, till they arrive at the higheſt Point of Perfection.

The End of the Fifth Book.

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THE ARGUMENT OF THE SIXTH BOOK.

HE begins with the Praiſe of Athens, *the City where* Epicurus *was born, and beſtows a great Encomium upon that Philoſopher. He gives an Account of the Subject of this Book, in a manner ſuited to the Principles of an* Epicurean. *He then explains the Nature of Meteors: And, leſt Men ſhould be terrified with the Roaring of* Jupiter's *Thunder, he tells us, that Thunder is produced either from the Colliſion, or Corraſion, or Diſruption of the Clouds; or by the Fire of Winds, either ſtruggling within the Bowels of the Clouds, or driving them with Violence againſt each other; or that it ariſes only from the Hiſſing of Flames, that fall from a dry Cloud into a wet; or, laſtly, that Thunder is but the cruſhing Noiſe of Bodies of Hail and Ice, that meeting violently in the Air, are daſhed to Pieces. As for the Lightning, which the* Latins *call* Fulgur, *he ſays it is nothing but Fire forc'd out of Clouds, either by their Colliſion or other Motion, or the Seeds of Flames that are driven out of Clouds by the Force of Winds. And then, as to the Thunderbolt, that other ſort of Lightning, which the Ancients call* Fulmen, *he teaches, that it conſiſts of a ſubtle and fiery Na-*

 ture;

ture; that it is conceived and bred in thick and high-raiſed Clouds; that being full ripe, it burſts out of the Clouds by the Force of Wind, that either breaks through them, claſhes them to Pieces, or beats from without with great Violence againſt them; that it conſiſts of Atoms ſo ſubtle and minute, that it is borne along the Air with wonderful Celerity; and that it is moſt frequent in the Vernal and Autumnal Seaſons. He derides the ſuperſtitious Doctrine of the Thuſcans *and others, who held, that Thunder and Lightning are not the Effects of natural Cauſes, but proceed merely from the Will of the offended, angry* Gods; *and that* Jupiter *himſelf is the Darter of Thunder: And becauſe a Preſter, or fiery Whirlwind, which is indeed a ſort of Lightning, and all other Whirlwinds are certain kind of Meteors, he diſputes concerning them, and explains the Nature, Cauſes, Motions, and Differences of them. He then treats of Clouds and of Rain: Clouds, he ſuppoſes, are either made of the roughеſt and moſt dry Particles of the Air, or of the Steams, Vapours, and Exhalations, that ariſe from the Earth and Waters: Rain, he ſays, is generated either by Compreſſion, as they call it, or by Tranſmutation; by Compreſſion, if the Force of the Winds ſqueeze the Water out of the Clouds; by Tranſmutation, if the Clouds themſelves are changed, and diſtill in falling Drops of Water. As to the other Meteors, the Rainbow, Snow, Wind, Hail, and Froſt, he only mentions them. He then proceeds to the ſeveral ſorts of Earthquakes, and the Cauſes of them; which he aſcribes either to hollow Parts of the Earth, which falling in, cauſe it to tremble; or to the tremulous Motion of the Waters, which he ſuppoſes the Earth to ſwim in; or to ſubterraneous and other Winds, which either ſhake the Earth in ſeveral Parts, or drive it to and fro. He obſerves why the Sea does not increaſe, notwithſtanding the immenſe Quantity of Water flowing into it;*

and

and imputes it either to the Vaſtneſs of the Sea itſelf; or becauſe the Heat of the Sun dries up its Waters; or becauſe the Winds, bruſhing over them, bear much of them away; or becauſe the Clouds draw much Moiſture from them; or, laſtly, becauſe of the Dryneſs of the Earth itſelf, which ſucks in and imbibes the Waters of the Sea. He ſearches into the Cauſes of the Burning of Mount Ætna; *and it proceeds, he ſays, either from the Violence of the Wind, or to the Exæſtuation of the Waters of the Sea, which entring beneath into the Cavities of the Mountain, extrude and force out the Seeds of the Flame that are engender'd and collected there, through the Openings that are on the Top of it. He treats of the annual Increaſe of the* Nile; *and aſcribes it either to the* Eteſian *Winds, that blow full againſt the Stream of that River, and thus hindring its Courſe, cauſe the Waters to overflow; or to Heaps of Sand which the Sea drives to the Mouths of it, and thus choaks them up; or to the Rains and Snows that fall, and are melted near the Fountain of the* Nile. *He then diſputes of the* Averni, *and other Tracts of the Earth, that are noxious, and even deadly to Birds, Men, Deer, Crows, Horſes,* &c. *He teaches why the Water of ſome Wells and Springs is hot in Winter and cold in Summer; and explains at large the attractive Power and Virtue of the Loadſtone. To the End of the Book he diſcourſes briefly of the Cauſe and Origin of Plagues and Diſeaſes; and concludes his Poem with an elegant Deſcription, taken from* Thucydides, *of the Plague that raged in* Athens, *and almoſt laid waſte the whole Country of* Attica, *in the Time of the* Peloponneſian *War.*

T. Lu-

T. Lucretii Cari

DE

RERUM NATURA.

LIBER SEXTUS.

PRIMÆ frugiferos fætus mortalibus ægris
Dididerunt quondam præclaro nomine Athenæ:
Et recreaverunt vitam, Legeſque rogârunt:
At primæ dederunt ſolatia dulcia vitæ,
Cùm genuere VIRUM *tali cum corde repertum,*
Omnia veridico qui quondam ex ore profudit:
Cujus & extincti propter divina reperta
Divolgata vetus, jam ad cœlum Gloria fertur.
Nam cùm vidit Hic, ad victum quæ flagitat uſus,
" *Et per quæ poſſent vitam conſiſtere tutam,*

Omnia

T. Lucretius Carus,

OF THE

NATURE *of* THINGS.

THE

SIXTH BOOK.

RENOWNED [a] *Athens* firſt to wretched Man gave the ſweet Fruits, and human Life refreſhed, and publiſhed Laws; but Comforts nobler far than Theſe ſhe gave, when to the World ſhe ſhew'd Great *Epicurus*, formed with ſuch a Soul; who from his Mouth deliver'd ſublime Truths, as from an Oracle; whoſe Fame for ſo Divine Diſcoveries, diſperſed every way abroad, was raiſed after Death above the Skies.

The Praiſe of Epicurus.

FOR when He ſaw how little would ſuffice for neceſſary Uſe, and by what ſmall Proviſions Life

[a] It is the general Opinion of the Ancients, that the *Athenians* firſt taught Men, who fed before upon Acorns, to plough the Earth, and to ſow Corn; and that they were the firſt likewiſe who made Laws, and compelled Men to quit their ſavage way of Life, and to enter into civil Society.

might

Omnia jam ferme Mortalibus eſſe parata:
Divitiis homines & Honore, & Laude potenteis
Affluere, atque bona Natorum excellere fama:
Nec minùs eſſe domi cuiquam tamen Anxia corda,
Atque animum infeſtis cogi ſervire querelis:
Intellexit, ibi vitium Vas efficere ipſum,
Omniaque illius vitio corrumpier intùs,
Quæ conlata foris, & commoda cunque venirent,
Partim quod fluxum, pertuſumque eſſe videbat,
Ut nulla poſſet ratione explerier unquam:
Partim quòd tetro quaſi conſpurcare ſapore
Omnia cernebat quæcunque receperat intùs.
Veridicis igitur purgavit pectora dictis,
Et finem ſtatuit Cuppedinis atque Timoris,
Expoſuitque Bonum Summum, quò tendimus omnes,
Quid foret, atque viam monſtravit tramite prono,
Quà poſſemus ad id recto contendere curſu:
Quidve Mali foret in rebus mortalibu' paſſim,
Quod flueret Naturæ vi, varièque volaret,
Seu Caſu, ſeu Vi, quòd ſic Natura paráſſet:
Et quibus è portis occurri cuique deceret:
Et genus Humanum fruſtra plerumque probavit
Volvere curarum triſteis in pectore fluctus.
Nam veluti Pueri trepidant, atque omnia cæcis
In tenebris metuunt, ſic Nos in luce timemus
Interdum nihilò quæ ſunt metuenda magis, quàm
Quæ Pueri in tenebris pavitant, finguntque futura.
Hunc igitur terrorem animi, tenebraſque neceſſe'ſt
Non radii Solis, nec lucida tela diei
Diſcutiant, ſed Naturæ ſpecies, Ratioque:
Quò magis inceptum pergam pertexere dictis.

might be preſerved; that Nature had prepared every thing ready to ſupport Mankind; that Men abounded with Wealth, and were loaded with Honour and Applauſe, and happy in their private Concerns, in the good Character of their Children, and yet their Minds were reſtleſs at home, complaining and lamenting the Miſery of their Condition; He perceived the Veſſel itſelf (the Mind) was the Cauſe of the Calamity, and by the Corruption of That, every thing, though ever ſo good, that was poured into it was tainted: It was full of Holes, and run out, and ſo could never by any means be filled; and whatever it received within, it infected with a ſtinking Smell. And therefore He purged the Mind by True Philoſophy, and ſet Bounds to our Deſires and our Fears. He laid open to us the chief Good, that Point of Happineſs we all aim at, in what it conſiſts, and ſhewed us the direct way that leads to it, and puts us into the ſtraight Road to obtain it. He taught what Misfortunes commonly attend human Life, whether they flow from the Laws of Nature or from Chance, whether from Neceſſity or by Accident; and by what means we are to oppoſe thoſe Evils, and ſtrive againſt them. And He has fully proved, that Mankind torment themſelves in vain, and are toſſed about in a tempeſtuous Ocean of Cares to no purpoſe.

FOR as Boys tremble and fear every thing in the dark Night, ſo we in open Day fear Things as vain, and little to be dreaded, as thoſe that Children quake at in the Dark, and fancy advancing towards them. This Terror of the Mind, this Darkneſs then, not the Sun's Beams, nor the bright Rays of Day can ſcatter, but the Light of Nature and the Rules of Reaſon; and therefore I ſhall the more readily proceed to execute what I have begun.

AND

Et quoniam docui, Mundi mortalia templa
Eſſe, & nativo conſiſtere corpore Cælum:
Et quæcunque in eo fiunt, fientque, neceſſe
Eſſe ea diſſolvi: Quæ reſtant percipe porro.
Quandoquidem ſemel inſignem conſcendere currum
Vincendi ſpes hortata'ſt, atque obvia curſu
Quæ fuerant, ſunt placato converſa furore.

Cætera, quæ fieri in Terris, cæloque tuentur
Mortales, pavidis cùm pendent mentibu' ſæpe
Efficiunt animos humileis formidine Divûm,
Depreſſoſque premunt ad terram, propterea quòd
Ignorantia cauſarum conferre Deorum
Cogit ad imperium res, & concedere regnum: &
Quorum operum cauſas nulla ratione videre
Poſſunt hæc fieri Divino numine reniur.
Nam bene qui didicere Deos ſecurum agere ævum:
Si tamen interea mirantur, qua ratione
Quæque geri poſſint, præſertim rebus in illis,
Quæ ſupera caput ætheriis cernuntur in oris,
Rurſus in antiquas referuntur Relligiones,
Et Dominos acreis aſciſcunt, omnia poſſe
Quos miſeri credunt, ignari quid queat eſſe,
Quid nequeat; finita poteſtas denique cuique
Quanam ſit ratione, atque altè terminus hærens.
Quò magis errantes tota regione feruntur.

Quæ niſi reſpuis ex animo, longèque remittis,
Diis indigna putando, alienaque pacis eorum,
Delibata Deûm per te tibi numina ſancta

AND ſince I taught the Fabrick of the World was mortal, and that the Heavens are formed of corruptible Seeds, and whatever they do, or ever will contain, muſt neceſſarily be diſſolved; attend now to what remains, eſpecially ſince the Hope of carrying the Prize has encouraged me to aſcend the Chariot, and engage in ſo noble a Race; and ſince the Difficulties that once attended the Courſe are removed, and the Roughneſs of the Way is made favourable and eaſy.

THE various Wonders Men behold in the Earth and in the Heavens, perplex their Minds, trembling and in Suſpenſe, and make them humble with the Fear of the *Gods*, and preſs them groveling to the Ground; and being ignorant of the Cauſe of theſe Events, they are forced to confeſs the Sovereignty, and give up every thing to the Command of theſe Deities: And the Effects they are unable to account for by Reaſon, they imagine were brought about by the Influence of the *Gods*; for ſuch as well know that the *Gods* lead a Life of Tranquility and Eaſe, if they ſhould ſtill wonder by what Power the World is carried on, eſpecially in the Things they ſee over their Heads in the Heavens above, they relapſe again into their old Superſtition; they raiſe over themſelves a Set of cruel Tyrants, who, the Wretches fancy, can do all Things, becauſe they know nothing of what can or what cannot be, or by what means a finite Power is fixed to every Being, and a Boundary immoveable which it cannot paſs. Such are more liable to Miſtakes, and to be carried widely from the right Way.

UNLESS you purge your Mind of ſuch Conceits, and baniſh them your Breaſt, and forbear to think unworthily of the *Gods*, by charging them with Things that break their Peace, thoſe ſacred Deities you will believe are always angry and

Sæpe aderunt; non quòd violari ſumma Deûm vis
Poſſit, ut ex ira pœnas petere imbibat acreis:
Sed quia Tute tibi placida cum pace quietos
Conſtitues magnos irarum volvere fluctus:
Nec delubra Deûm placido cum pectore adibis:
Nec, de corpore quæ ſancto Simulacra feruntur,
In menteis hominum Divinæ nuntia formæ,
Suſcipere hæc animi tranquilla pace valebis.
Inde videre licet, qualis jam vita ſequatur.
Quam quidem ut à nobis Ratio veriſſima longè
Rejiciat, quanquam ſunt à me multa profata,
Multa tamen reſtant, & ſunt ornanda politis
Verſibus, & ratio Cæli, ſpecieſque tenenda.
Sunt Tempeſtates, & Fulmina clara canenda,
Quid faciant, & qua de cauſa quæque ferantur,
Ne trepides cæli diviſis partibus amens,
Unde volans Ignis pervenerit, aut in utram ſe
Verterit hinc partem: quo pacto per loca ſepta
Inſinuârit, & hinc dominatus ut extulerit ſe:
Quorum operum cauſas nulla ratione videre
Poſſunt, ac fieri Divino numine rentur.
Tu mihi ſupremæ præſcripta ad candida calcis
Currenti ſpatium præmonſtra callida Muſa,
Calliope, requies Hominum, Divûmque voluptas:
Te duce ut inſignem capiam cum laude coronam.

Principio,

and offended with you; not that the Supreme Power of the *Gods* can be ſo ruffled as to be eager to puniſh ſeverely in their Reſentments, but becauſe you fancy thoſe Beings, who enjoy a State of perfect Peace in themſelves, are ſubject to Anger and the Extravagances of Revenge: And therefore you will no more approach their Shrines with an eaſy Mind; no more in Tranquility and Peace will you be able to receive the Images, the Repreſentations of their divine Forms, that flow from their pure Bodies, and ſtrike powerfully upon the Minds of Men: From hence you may collect what a wretched Life you are to lead. That the Rules therefore of right Reaſon may keep theſe Evils at the greateſt Diſtance from us, though I have offered many Things upon this Subject before, yet much ſtill remains to be obſerved, which I ſhall adorn with ſmootheſt Verſe: And firſt, the Nature and Phænomenons of the Heavens muſt be explained.

And now I ſing of Tempeſts, and the flaming Blaſts of Lightning; how they fly, and from what Cauſe they dart through all the Air, leſt, when you view the ſeveral Parts of Heaven, you tremble, and, mad with Superſtition, aſk, whence comes this winged Fire, and to what Quarter of the Heavens does it direct its Courſe; how does it pierce through Walls of Stone, and having ſpent its Rage goes out again? The Cauſes of which Events, ſince Men cannot aſſign by the Laws of Reaſon, they muſt, they ſuppoſe, be effected by the Power of the *Gods*.

And Thou *Calliope*, my ſkilful Muſe, the Joy of Men and Pleaſure of the *Gods*, lead on the Courſe, and guide me to the Goal; that, by thy Conduct, I may gain a Crown, and end the Race with Glory.

Principio, Tonitru quatiuntur cærula cæli,
Propterea quia concurrunt ſublime volantes
Ætheriæ Nubes contra pugnantibu' Ventis.
Nec fit enim ſonitus cæli de parte ſerena,
Verùm ubicunque magis denſo ſunt agmine Nubes,
Tam magis hinc magno fremitus fit murmure ſæpe.
Præterea, neque tam condenſo corpore Nubes
Eſſe queunt, quàm ſunt Lapides, ac Tigna: neque autem
Tam tenues, quàm ſunt Nebulæ, Fumique volantes.
Nam aut cadere abrupto deberent pondere preſſæ,
Ut Lapides: aut, ut Fumus, conſtare nequirent,
Nec cohibere niveis gelidas, & grandinis imbreis.
Dant etiam ſonitum patuli ſuper æquora mundi,
Carbaſus ut quondam magnis intenta theatris
Dat crepitum malos inter jactata, trabeiſque:
Interdum perſciſſa furit petulantibus Euris,
Et fragileis ſonitus chartarum commeditatur,
Id quoque enim genus in Tonitru cognoſcere poſſis,
Aut ubi ſuſpenſam veſtem, chartaſve volanteis
Verberibus venti verſant, planguntque per auras.

Fit

FIRST, [b] The blue Arch of Heaven is ſhaken with Thunder, becauſe the airy Clouds, flying aloft, are forced by adverſe Winds, and ſtrike together; for where the Sky is clear, you hear no Noiſe; but where the Clouds are thick, and drive in Troops, thence comes the louder Sound and Murmur through the Air. *Of Thunder.*

BESIDES, the Clouds are not ſo ſolid in their Contexture as Stones and Wood, nor ſo thin as Miſts and flying Smoke; for then, depreſſed by their own Weight, they would either fall abruptly down as Stones, or like Smoke they would diſperſe, and not be able to keep in the chilling Snow and Showers of Hail.

THEY [c] give the Crack through the wide Space of Heaven, as Curtains ſtrained upon the Poſts and Beams in lofty Theatres, when ruffled by the boiſterous Winds and blown to Pieces, they make a rattling Noiſe like Paper torn. This Thunder, you obſerve, will ſound like Cloaths ſpread out, or flying Sheets, when toſſed by Strokes of Wind they roll and flutter through the Sky.

[b] The Poet begins his Explanation of Meteors; and firſt of Thunder, the various Motions and Differences of which he reſolves ſeveral Ways: He ſays, firſt, that the Noiſe of Thunder is made by the Colliſion of Clouds that are driven and daſhed againſt one another by adverſe Winds; and if it be objected that Clouds are rare and thin Bodies, and therefore very improper and unlikely to make ſo great a Noiſe, he anſwers, that the Clouds do not equal Stones and Wood in Denſity, nor, on the other hand, are ſo rare as Miſt and Smoke, for then indeed they would vaniſh away; but they are however of a middle Nature, between both, and denſe enough to contain Hail and Snow.

[c] He obſerves, that one ſingle Cloud, driven by the Wind, is ſometimes rent aſunder by the Violence of the Blaſt, and makes a Noiſe like the Ruffling of Curtains that are hung at a large Theatre; for the *Roman* Theatres were uncover'd at Top, and, to keep off the Sun or Rain from the Spectators, Curtains were ſpread over them.

Fit quoque enim interdum, ut non tam concurrere Nubes
Frontibus adverſis poſſint, quàm de latere ire
Diverſo motu radentes corpori' tractum:
Aridus unde aureis terget ſonus ille diuque
Ducitur, exierit donec regionibus arctis.
Hoc etiam pacto Tonitru concuſſa videntur
Omnia ſæpe gravi tremere, & divolſa repentè
Maxima diſſiluiſſe capacis mœnia mundi,
Cùm ſubitò validi Venti conlecta procella
Nubibus intorſit ſeſe, concluſaque ibidem
Turbine verſanti magis ac magis undique Nubem
Cogit, uti fiat ſpiſſo cava corpore circum.
Poſt ubi commovit vis ejus & impetus acer,
Tum perterricrepo ſonitu dat miſſa fragorem.
Nec mirum, cùm plena animæ Veſicula parva
Sæpe ita dat pariter ſonitum diſploſa repentè.
Eſt etiam ratio, cùm Venti nubila perflant,
Cur ſonitus faciant: etenim ramoſa videmus
Nubila ſæpe modis multis, atque aſpera ferri.
Scilicet ut crebram ſylvam cùm flamina Cauri
Perflant, dant ſonitum frondes, ramique fragorem.
Fit quoque, ut interdum validi vis incita venti
Perſcindat nubem perfringens impete recto.
Nam quid poſſit ibi flatus, manifeſta docet res.
Hîc, ubi lenior eſt, in terra cùm tamen alta
Arbuſta evolvens radicibus haurit ab imis.
Sunt etiam fluctus per nubila, qui quaſi murmur
Dant infringendo graviter: quod item fit in altis
Fluminibus, magnoque mari, cùm frangitur æſtu.

Fit

And ſometimes the Clouds will not directly meet, and engage Front to Front, but in their different Motions will rudely ſhock the Sides of one another as they paſs. Hence comes that dry craſhing Sound we hear, that laſts for ſome Time, before it breaks its cloſe Priſon and roars out.

All Things, you ſee from hence, will ſhake and tremble at the dreadful Clap. And the Heavens (the mighty Walls of this wide World) are torn and burſt aſunder in a Moment, when a collected Force of reſtleſs Wind gets ſuddenly within a Cloud, and there incloſed it rolls furiouſly about, and ſtretches the hollow Space, ſtill more and more, until the Sides grow thick and are condenſed; and when it ſummons its whole Strength, and rages to get free, then comes the frightful Break, it flies abroad with horrid Noiſe; nor is this ſtrange, when a ſmall Bladder full of Wind, will likewiſe give a mighty Crack when it is ſuddenly burſt.

When the Winds ſtrike violently upon the Clouds, this may produce a Noiſe; for we ſee the branched Clouds, with their rough Edges, are driven about in various Manners; as the Blaſts of South-Weſt Winds, blowing hard upon the thick Woods, the Boughs give a Sound, and the Branches rattle through the Air.

And ſometimes the violent Force of a fierce Wind will beat directly, with all its Rage, upon a Cloud, and cut it aſunder. That the Winds will ſhatter the Clouds, is evident by Experience; for here below, where their Power is much weaker, they will overturn the ſtrongeſt Trees, and tear them up by the Roots.

And then, the Clouds, like Waves, roll about in the wide Ocean of the Air, and cauſe a roaring Noiſe by daſhing together. The ſame happens in large Rivers, and in the wide Sea, when it is

Fit quoque, ubi è nube in nubem vis incidit ardens
Fulminis: hæc multo ſi fortè humore recepit
Ignem, continuò ut magno clamore trucidet:
Ut calidis candens ferrum è fornacibus olim
Stridit, ubi in gelidum properè demerſimus imbrem.
Aridior porro ſi Nubes accipit ignem,
Uritur ingenti ſonitu ſuccenſa repente:
Lauricomos ut ſi per monteis flamma vagetur,
Turbine ventorum comburens impete magno.
Nec res ulla magis, quàm Phœbi Delphica Laurus
Terribili ſonitu flamma crepitante crematur.
Denique ſæpe Geli multus fragor, atque ruina
Grandinis, in magnis ſonitum dat Nubibus altè.
Ventus enim cùm confercit, franguntur in arctum
Concreti montes nimborum, & grandine miſti.
Fulgit item, Nubes ignis cùm ſemina multa
Excuſſere ſuo concurſu, ſeu Lapidem ſi
Percutiat Lapis, aut Ferrum, nam tum quoque lumen
Exſilit, & claras ſcintillas diſſupat ignis.
Sed Tonitrum fit uti poſt auribus accipiamus,
Fulgere quàm cernant oculi, quia ſemper ad aureis

Tardiùs

broken and rages with the Tide. And ſometimes [d] the fiery Force of Lightning falls from one Cloud into another: If a Cloud full of Moiſture receives this Fire, it extinguiſhes it with a great Noiſe; as a red-hot Iron, juſt taken out of the glowing Heat, hiſſes when we plunge it haſtily into cold Water: But if a dry Cloud receives the Flame, it takes fire inſtantly, and rattles in the Air; as when a Fire, raging with mighty Force, is driven by ruſhing Winds upon a Hill cover'd with Laurels, and ſets all in a Blaze; for nothing burns with a more dreadful Noiſe and crackling Flame, than the Leaves of the *Delphick* Laurel, ſacred to *Apollo*. And laſtly, Pieces of Ice and Showers of Hail, incloſed in mighty Clouds, will often ſound like Thunder; for when the Winds have driven and preſſed them cloſe, theſe mountainous Clouds, being condenſed, will burſt and diſcharge their Weight of Ice and Hail.

Lightning.

IT [e] lightens when the Clouds, by violent Strokes in meeting, beat out many Seeds of Fire, and ſtrike as Flint and Steel, or Stone and Stone; for then the Light leaps out, and ſcatters ſhining Sparks of Fire.

Why the Light is ſeen before we hear the Thunder.

BUT we never hear the Thunderclap till we have ſeen the Lightning; for the Images of Things approach our [f] Ears much ſlower than

[d] He ſays, that Lightning falling from a dry Cloud into a Wet, hiſſes like red-hot Iron when plunged into the Smithy. This was particularly the Opinion of *Anaxagoras*.

[e] Lightning may be ſtruck out of harden'd Clouds, daſh'd againſt one another, as Fire is out of Iron, Flint, or Wood; for we are to ſuppoſe, that ſome Seeds of Fire are lurking in the Clouds, as well as in thoſe other Things.

[f] The Reaſon is, becauſe the *Materia Subtilis* in lucid Bodies, which is the Medium by which we ſee, conſiſts of Particles that are much leſs, and more ſolid, than thoſe of the Air, the Medium by which we hear; and conſequently the Motion of that ſubtle Matter is more quick than that of the Air, becauſe more Strength is requiſite to overcome the Reſiſtance of a greater Body than that of a leſs.

Tardiùs adveniunt, quàm viſum quæ moveant res.
Id licet hinc etiam cognoſcere: cædere ſiquem
Ancipiti videas ferro procul arboris auctum,
Antè ſit ut cernas ictum, quàm plaga per aureis
Det ſonitum: ſic Fulgorem quoque cernimus antè
Quàm Tonitrum accipimus, pariter qui mittitur igni,
E ſimili cauſa, & concurſu natus eodem:
Hoc etiam pacto volucri loca lumine tingunt
Nubes, & tremulo tempeſtas impete fulgit.
Ventus ubi invaſit Nubem, & verſatus ibidem
Fecit, ut antè, cavam, docui, ſpiſſeſcere Nubem,
Mobilitate ſua ferviſcit; ut omnia motu
Percaleſacta vides ardeſcere: plumbea verò
Glans etiam longo curſu volvenda liqueſcit.
Ergo fervidus Hic Nubem cùm perſcidit atram,
Diſſupat ardoris quaſi per vim expreſſa repente
Semina, quæ faciunt nictantia fulgura flammæ:
Inde Sonus ſequitur, qui tardiùs adlicit aureis,
Quàm quæ perveniunt oculos ad lumina noſtros.
Scilicet hoc denſis fit nubibus, & ſimul altè
Exſtructis aliis alias ſuper impete miro.
Nec tibi ſit fraudi, quòd nos inferne videmus
Quàm ſint lata magis, quàm ſurſum exſtructa quid extent;
Contemplator enim cùm montibus adſimilata
Nubila portabunt Venti tranſverſa per auras:
Aut ubi per magnos monteis cumulata videbis
Inſuper eſſe aliis alia, atque urgere ſuperna
In ſtatione locata ſepultis undique ventis:
Tum poteris magnas moleis cognoſcere eorum,

Spe-

they reach our Eyes. This you prove, when you obſerve a Fellow at a Diſtance is cutting down a Tree, you ſee the Blow before you hear the Stroke: And ſo we ſee the Lightning before we hear the Thunder, though the Noiſe and the Flame fly out together, and proceed from the ſame Cauſe, the ſame Shock and Burſting of the Clouds.

AND ſo [g] the Clouds will blaze with winged Fire, and Tempeſts will ſhine bright with trembling Flame, when the Winds get within a Cloud, and roll about, and make it hollow (as I ſaid before) till it grows condenſed, and then by Motion kindles and breaks out into a Flame; for Things made hot by Motion, we ſee, will fall on fire, and leaden Bullets, in a long Courſe through the Air, have melted as they fled: Therefore this fiery Wind, when it has burſt the Sides of this dark Cloud, forces and inſtantly ſcatters many Seeds of Fire, which makes the ſudden Flaſh of Lightning all abroad. Then comes the Noiſe that ſlowly moves the Ear, and later than the Lightning ſtrikes our Sight. This happens when the Clouds are thick, and roll on Heaps, one Pile above another, with wondrous Swiftneſs through the Air.

NOR muſt you think this falſe, becauſe the Clouds, to us that ſtand below, ſeem rather broad than deep, or raiſed on Heaps; for ſee how the Winds will whirl along the Air theſe rolling Clouds, raiſed Mountain-high; and on the Mountain-Tops the Clouds, obſerve, are higher ſome than others, and piled on Heaps; and, when the Winds are ſtill, the higher Row will preſs the Lower down: Then you may judge of their prodigious Weight, and *Thick Clouds.*

[g] As Thunder is cauſed by the Winds breaking and tearing the Clouds, ſo Lightning is made by the ſame Winds, that by the Swiftneſs of their Motion grow hot, and kindle into Flames, as they are agitated and whirled about in the Bowels of the Clouds.

view

Speluncaſque velut ſaxis pendentibu' ſtructas
Cernere, quas Venti cùm, tempeſtate coorta,
Complerunt, magno indignantur murmure clauſi
Nubibus, in caveiſque ferarum more minantur:
Nunc hinc, nunc illinc fremitus per Nubila mittunt:
Quærenteſque viam circumverſantur, & ignis
Semina convolvunt è Nubibus: atque ita cogunt
Multa, rotantque cavis flammam fornacibus intùs,
Donec divolſa fulſerunt nube coruſci.

Hac etiam fit uti de cauſa mobilis ille
Devolet in terram liquidi color aureus ignis,
Semina quòd Nubeis ipſas permulta neceſſe 'ſt
Ignis habere: etenim cùm ſunt humore ſine ullo,
Flammeus eſt plerumque colos & ſplendidus ollis.
Quippe etenim Solis de lumine multa neceſſe 'ſt
Concipere, ut meritò rubeant, igneiſque profundant.
Haſce igitur cùm Ventus agens contruſit in unum
Compreſſitque locum cogens: expreſſa profundunt
Semina, quæ faciunt flammæ fulgere colores.

Fulgit item, cùm rareſcunt quoque Nubila cæli.
Nam cùm Ventus eas leviter diducit eunteis,
Diſſolvitque, cadant ingratis illa neceſſe 'ſt
Semina, quæ faciunt fulgorem: tum ſine tetro
Terrore, & Sonitu fulgit, nulloque tumultu.

view their hollow Caverns, form'd as it were in hanging Rocks, where in a Tempeſt the rough Winds are ſhut, and ſcorn to be confined, and roar with horrid Noiſe, like ſavage Beaſts within their Dens chain'd down. They grumble here and there, on every Side, within the Clouds, and ſtriving to get free, roll every way about, and as they move collect the fiery Seeds in great Abundance, and in the heated Caverns toſs them about, until the Clouds burſt, and then they flaſh in ſhining Flame.

And for this Reaſon, perhaps, the Lightning (that ſwift and golden Stream of pureſt Fire) flies down upon the Earth, becauſe the Clouds muſt needs contain within themſelves Plenty of fiery Seeds; and ſuch as are without all Moiſture, look bright and of a fiery Colour; for they muſt receive many fiery Particles from the Sun, and therefore cannot but look red, and ſend out Flame. Theſe, when the Force of Winds have preſſed and driven into a narrow Space, the fiery Seeds, being ſqueezed, fly out, and make that glaring Flame to ſhine abroad.

Or [h] it lightens, becauſe the Clouds above are rarefied; for when the Winds blow on them as they paſs, and gently ſtretch them out, and wear them thin, the Seeds of Fire that make the Light muſt needs fall out; but then it ſhines without much Noiſe and Terror, and cauſes no Confuſion in the Sky.

[h] He ſaid before, that the Seeds of Fire that are in the Clouds, are driven out by the Strength and Violence of the Wind; but now obſerves, that if they are not driven out in that manner, yet they muſt of neceſſity fall down when the Clouds grow thin, and break and open of themſelves: And that from thence proceeds the mild and gentle Lightning, whoſe Splendor dazzles the Eyes, though no Thunder invade the Ear.

Now

Quod ſupereſt, quali natura prædita conſtent
Fulmina, declarant ictus, & inuſta vapore
Signa, notæque graveis halantes Sulfuris auras.
Ignis enim ſunt hæc, non Venti ſigna, neque Imbris.
Præterea, per ſe accendunt quoque tecta domorum,
Et celeri flamma dominantur in ædibus ipſis.
Hunc tibi ſubtilem cùm primis ignibus ignem
Conſtituit natura minutis, mobilibuſque
Corporibus, cui nil omninò obſiſtere poſſit.
Tranſit enim validè Fulmen per ſepta domorum,
Clamor uti, ac Voces: tranſit per ſaxa, per æra:
Et liquidum puncto facit æs in tempore, & aurum.
Curat item ut vaſis integris Vina repente
Diffugiant, quia nimirum facilè omnia circum
Conlaxat, rareque facit lateramina vaſis,
Adveniens calor ejus ut inſinuatur in ipſum: &
Mobiliter ſolvens differt primordia Vini:
Quod Solis vapor ætatem non poſſe videtur
Efficere, uſqueadeo pollens fervore coruſco:
Tanto mobilior vis, & dominantior hæc eſt.
Nunc ea quo pacto gignantur, & impete tanto
Fiant, ut poſſint ictu diſcludere Turreis,
Diſturbare domos, avellere tigna, trabeiſque,
Et Monumenta virûm demoliri, atque ciere,
Exanimare Homines, Pecudes proſternere paſſim:
Cætera de genere hoc qua vi facere omnia poſſint,
Expediam, neque Te in promiſſis plura morabor.

Now of what Seeds the [i] Lightning is compoſed, its Strokes will ſhew, and Marks of Fire it leaves behind, and Steams of ſtinking Sulphur in the Air; for theſe are Signs of Fire, not Wind or Rain; for Lightning will ſet on fire whole Towns, and with ſwift Flames conſume the Houſes to the Ground. Nature has formed this ſubtle Fire of Seeds of Heat the moſt minute, and Particles moſt apt to move, which nothing can reſiſt. It paſſes forcibly through the Walls, as Voice and Sound. It flies through Stones and Braſs, and in a Moment melts both Braſs and Gold. It has ſtrange Power to draw the Liquor out, and leave the Veſſel whole: This it does by looſening the Contexture of the Caſk, and by widening its Pores every way, that ſo its Heat may more eaſily find a Paſſage through; and then, by the Swiftneſs of its Motion, it diſſolves the Body of the Liquor, ſcatters its Seeds, and forces it out: And this the Heat of the Sun is not able to do in an Age; ſo much ſtronger is the Force of this bright Flame, its Motion more ſwift, and its Power more irreſiſtible.

The Strength of Thunder.

BUT how theſe Fires are formed, and how they rage with ſo great Force, as by their Strokes to beat down Towers, to overturn Houſes, to tear up Poſts and Beams, to ſhake and tumble down Monuments of Stone, to ſtrike Men dead, and kill whole Herds at once; by what Power they cauſe ſuch Scenes of Ruin, This I ſhall now explain, as I promiſed, and keep you no longer in Suſpenſe.

[i] Having treated of the Coruſcation of Lightning, which the *Latins* called *Fulgur*, he is now going to diſpute concerning the *Fulmen*, by which the Ancients meant the Lightning that falls and does Miſchief upon the Earth, commonly called the *Thunderbolt*. The Poet ſpeaks confuſedly upon this Occaſion, and often uſes the one for the other.

YOU

Fulmina gignier è craſſis, altèque putandum'ſt
Nubibus exſtructis: nam cœlo nulla ſereno,
Nec leviter denſis mittuntur nubibus unquam.
Nam dubio procul hoc fieri manifeſta docet res,
Quòd tunc per totum concreſcunt Aëra nubes
Undique, uti tenebras omneis Acherunta reamur
Liquiſſe, & magnas cœli complêſſe cavernas:
Uſqueadeo tetra nimborum nocte coorta
Impendent atræ formidinis ora ſuperne,
Cùm commoliri tempeſtas Fulmina cœptat.

Præterea, perſæpe niger quoque per mare Nimbus,
Ut picis è cœlo demiſſum flumen, in undas
Sic cadit, & fertur tenebris procul, & trahit atram
Fulminibus gravidam tempeſtatem, atque procellis,
Ignibus, ac ventis cumprimis ipſe repletus:
In terra quoque ut horreſcant, ac tecta requirant.
Sic igitur ſupera noſtrum caput eſſe putandum'ſt
Tempeſtatem altam: neque enim caligine tanta
Obruerent terras, niſi inædificata ſupernè
Multa forent multis exemto Nubila ſole:
Nec tanto poſſent hæc terras opprimere imbri,
Flumina abundare ut facerent, campoſque natare,
Si non exſtructis foret altè Nubibus æther.

His igitur Ventis, atque Ignibus omnia plena
Sunt; ideo paſſim fremitus, & fulgura fiunt:
Quippe etenim ſuperà docui, permulta vaporis
Semina habere cavas nubeis: & multa neceſſe'ſt
Concipere ex Solis radiis, ardoreque eorum.
Hìc ubi Ventus eas idem qui cogit in unum
Fortè locum quemvis, expreſſit multa vaporis
Semina, ſeque ſimul cum eo commiſcuit igni:
Inſinuatus ibi Vortex verſatur in alto,
Et calidis acuit Fulmen fornacibus intùs.

You are to obſerve then, that Thunder is produced from thick Clouds, raiſed high one above another in the Air; for the Thunder never roars in a clear Sky, nor is diſcharged from Clouds that are not thick and condenſed; and this is evident from common Obſervation. The Clouds thicken every way over all the Heavens, as if the whole Maſs of Darkneſs had left the Shades of Hell, and filled the ſpacious Hollows of the Sky; and this dark Heap of Clouds ſpreads a dreadful Night over our Heads, and makes us tremble here below. Theſe are the Signs when a Tempeſt is forging Thunder in the Air.

Besides, a black Cloud is often obſerved at Sea, below the dark Regions of the Clouds, that falls from the Sky like a Stream of flowing Pitch into the Water; and being full of Fire and Wind, draws a black Tempeſt with it, loaded with Storms and Thunder; ſo that thoſe at Land tremble, and fly for Shelter to their Houſes. Thoſe Clouds then, you muſt think, are high above our Heads: They could not overwhelm the Earth with ſo much Darkneſs, were they not raiſed on Heaps above, and driven between Us and the Sun's Light; nor could they load the Earth with ſo great Showers, and make the Rivers ſwell and drown the Plains, unleſs the Clouds were raiſed on Heaps in the upper Regions of the Air.

These Clouds are fully charged with Wind and Fire, and thence the Lightnings flaſh and Thunders roar; for, as I ſaid above, theſe hollow Clouds are full of fiery Seeds, and many they receive from the Sun's Rays, and borrow from their Heat: And when the Wind compels them to retreat to cloſer Room, it drives out many Seeds of Fire, and mingles with the Flame. Then the loud Tempeſt rolls along the Sky, and in its heated Entrails forms and points the Thunder.

Nam duplici ratione accenditur, Ipſe ſua nam
Mobilitate caleſcit, & è contagibus ignis.
Inde ubi percaluit vis Venti, vel gravis Ignis,
Impetus inceſſit: maturum tum quaſi Fulmen
Perſcindit ſubitò Nubem, ferturque coruſcis
Omnia luminibus luſtrans loca percitus ardor:
Quem gravis inſequitur Sonitus, diſploſa repente
Opprimere ut cæli videantur templa ſuperne.
Inde tremor Terras graviter pertentat, & altum
Murmura percurrunt cælum: nam tota fere tum
Tempeſtas concuſſa tremit, fremituſque moventur:
Quo de concuſſu ſequitur gravis Imber, & uber,
Omnis uti videatur in Imbrem vertier Æther,
Atque ita præcipitans ad diluviem revocare:
Tantus diſcidio nubis, ventique procella,
Mittitur ardenti Sonitus cùm provolat ictu.
Eſt etiam cùm vis extrinſecùs incita Venti
Incidit in validam maturo fulmine Nubem:
Quam cùm perſcidit, extemplo cadit igneus ille
Vortex, quod patrio vocitamus nomine Fulmen.
Hoc fit idem in parteis alias, quocunque tulit vis.
Fit quoque ut interdum Venti vis miſſa ſine igni,
Igneſcat tamen in ſpatio, longoque meatu,
Dum venit, amittens in curſu corpora quædam
Grandia; quæ nequeunt pariter penetrare per auras:
Atque alia ex ipſo conradens Aëre portat
Parvula, quæ faciunt ignem commiſta volando:
Non alia longè ratione, ac plumbea ſæpe
Fervida fit Glans in curſu, cùm multa rigoris
Corpora dimittens ignem concepit in auris.

Fit

der. This Wind is ſet on fire, either by the Rapidity of its own Motion, or catches from the fiery Seeds within the Cloud; and when it is raging hot, and in a Flame, it collects all its Fury, and then the ripen'd Thunder inſtantly ſplits and burſts the Cloud. The fiery Tempeſt blazes all abroad with Darts of flaſhing Light, followed by frightful Noiſe, as if the Temples of the *Gods* above were rent aſunder. The Earth below trembles dreadfully at the Shock, and the loud Murmurs ſcour through all the Heavens; for the whole Tempeſt ſhakes, and roars aloud. Then grievous Showers in great Abundance follow the Concuſſion, as if the Skies were all diſſolved in Rain, and poured down Inundations from above. So dreadful is the Clap that flies abroad with red-hot Lightning, when the Clouds burſt, and Storms of fiery Wind rage through the Air.

OR elſe, [k] the Lightning flies when, from without, a furious Wind beats hard upon a Cloud, replete with Thunder ripe for Birth; which, when it burſts the fiery *Vortex*, falls (we in our Language call it *Thunder)* and makes its way where the Strokes moſt prevailed.

SOMETIMES a furious Wind will burſt the Cloud before 'tis ſet on fire, but kindles as it flies in its long Paſſage through the Air; for in its Courſe it throws off the heavy Seeds that lay behind, and could not make their Way; and bruſhed and carried off other ſmall Seeds from the Air, which join and fall on fire as they fly: Juſt as a Ball of Lead melts in its Courſe, and throwing off the cold and ſtubborn Seeds, takes fire and ſoftens in the Air.

[k] If the Wind that is pent up in the Cloud cannot break through, it may be aſſiſted by other Winds from without; and by whatever means the Cloud be opened, the Flame that is ripe for Birth will neceſſarily fall down.

Fit quoque, ut ipſius Plagæ vis excitet ignem,
Frigida cùm Venti pepulit vis miſſa ſine igni:
Nimirum quia cùm vehementi perculit ictu,
Confluere ex ipſo poſſunt elementa Vaporis;
Et ſimul ex illa, quæ tum res excipit ictum,
Ut lapidem ferro cùm cædimus, evolat Ignis:
Nec quòd frigida vis ſit ferri, hoc ſecius illa
Semina concurrunt calidi fulgoris ad ictum:
Sic igitur quoque res accendi Fulmine debet,
Opportuna fuit ſi fortè, & idonea flammis.
Nec temerè omnino planè vis frigida Venti
Eſſe poteſt, ex quo tanta vi immiſſa ſuperne'ſt:
Quin priùs in curſu ſi non accenditur igni,
At tepefacta tamen veniat commiſta calore.
Mobilitas autem fit Fulminis, & gravis ictus,
Et celeri ferme pergunt ſic Fulmina lapſu:
Nubibus ipſa quòd omnino priùs incita ſe Vis
Conligit, & magnum conamen ſumit eundi.
Inde, ubi non potuit Nubes capere impetis auctum,
Exprimitur vis, atque ideo volat impete miro,
Ut validis quæ de Tormentis miſſa feruntur.
Adde quod è parvis, ac levibus eſt elementis:
Nec facile'ſt tali naturæ obſiſtere quicquam:
Inter enim fugit, ac penetrat per rara viarum.
Non igitur multis offenſibus in remorando
Hæſitat: hanc ob rem celeri volat impete labens.

Deinde,

AND the Fury of the [1] Stroke, perhaps, may raiſe a Fire, when the Force of a cold Wind, unkindled, beats hard with all its Power; for then the Seeds of Fire may flow together upon the Violence of the Stroke, not only from the Wind, but from the Thing it ſtrikes; as when we ſtrike the Flint with Steel, the Fire flies out; and though the Iron be by Nature cold, yet when it feels the Blow the hot Seeds of Fire will ſpread abroad: And thus, whatever the Lightning falls upon may eaſily be ſet on fire, if it be in its Nature fit and diſpoſed to burn. Nor can the Wind be ſuppoſed to be perfectly cold, ſince it is diſcharged from above with ſo much Violence; and if it be not inflamed as it drives through the Air, yet it muſt have ſome Degree of Heat when it comes to the Earth.

THE Swiftneſs and heavy Stroke of the Thunder, and the Violence of its Fall, proceed from hence. The Wind, ſhut up within a Cloud, rages in all its Strength, and ſtruggles hard to get free; and when the Cloud can no longer bear the Fury of its Efforts, it breaks out and flies abroad with mighty Force, as Stones and Darts from mighty Engines thrown.

BESIDES, the Thunder is formed of ſmall and ſmooth Seeds, ſo ſubtle, that nothing can withſtand its Force; it gets between and pierces through the ſmalleſt Pores; it meets with nothing that can divert its Paſſage, and therefore flies abroad with the ſwifteſt Motion.

[1] If the Wind beats furiouſly upon any thing, the Seeds of Fire may flow together upon the Stroke, as well out of the Wind as out of the Thing it ſtrikes; thus the Wind takes fire, and Lightning is made. But that ſuch a Confluxion of the Seeds of Fire may be made in that manner, is evident from the Striking of Flint and Iron. And the Objection of the Winds being cold (though even that can by no means be granted, by reaſon of the Swiftneſs of their Motion) is of no Weight; for the Nature of Iron is full as cold, yet Fire will ſparkle out when we ſtrike it.

Deinde, quod omnino natura Pondera deorſum
Omnia nituntur: cùm plaga ſit addita verò,
Mobilitas duplicatur, & impetus ille graveſcit:
Ut vehementiùs, & citiùs, quæcunque morantur
Obvia, diſcutiat plagis, itinerque ſequatur.

Denique, quod longo venit impete, ſumere debet
Mobilitatem, etiam atque etiam quæ creſcit eundo,
Et validas auget vireis, & roborat ictum.
Nam facit, ut, quæ ſint illius Semina cunque,
E regione locum quaſi in unum cuncta ferantur,
Omnia conjiciens in eum volventia curſum.
Forſan & ex ipſo veniens trahat Aëre quædam
Corpora, quæ plagis intendunt mobilitatem.

Incolumeiſque venit per res, atque integra tranſit
Multa, foraminibus liquidis quia travolat Ignis.
Multaque perfringit, cùm corpora Fulminis ipſa
Corporibus rerum inciderint, quà texta tenentur.
Diſſolvunt porro facilè Æs, Aurumque repente
Conferveſacit; è parvis quia facta minutè
Corporibus vis eſt, & lævibus ex elementis,
Quæ facilè inſinuantur, & inſinuata repente
Diſſolvunt nodos omneis, & vincla relaxant.

Autumnoque magis ſtellis fulgentibus alta
Concutitur Cæli domus undique, totaque Tellus;
Et cùm tempora ſe Veris florentia pandunt.
Frigore enim deſunt Ignes, Ventique Calore
Deficiunt, neque ſunt tam denſo corpore Nubes.
Inter utrumque igitur cùm Cæli tempora conſtant,
Tum variæ cauſæ concurrunt Fulminis omnes.

Nam

AND then, ſince all Bodies of Weight naturally deſcend, when Blows or outward Force is added to their innate Gravity, their Motion doubles, and the Violence of the Strokes drive them downwards with the greater Speed, and conſequently they beat through every thing that obſtructs their Motion much ſooner, and with more Vehemence perſue their Courſe.

AND, laſtly, the greater the Diſtance is from whence a Body deſcends, its Swiftneſs in proportion increaſes; it ſtill gathers Strength as it moves, grows more violent, and the Blow is the heavier when it falls; for all its Seeds are driven down by that Length of Violence to one Point, and unite all their Powers in the ſame Motion; or perhaps they carry with them other Seeds in their Paſſage through the Air, which beat them on, and keep them ſteady in their Deſcent.

THE Lightning makes its Way and paſſes through Bodies that are Rare, and leaves them ſafe and unhurt; but other Bodies it rends aſunder, becauſe its fiery Seeds ſtrike through their ſolid Corpuſcles which hold them together: And therefore it eaſily diſſolves Braſs and Gold, becauſe it conſiſts of exceeding ſmall and ſmooth Particles, which work themſelves without Difficulty into the very Principles, and in an inſtant melt the whole Contexture, and looſen the Ties and Bonds by which they were ſecured.

AND in Autumn, and when the flowery Seaſon of the Spring diſplays its Beauty, then the high Palaces of Heaven with all its ſhining Stars, and the whole Earth, are ſhaken moſt with Thunder; for in the Winter there wants Fire, and in Summer there is no Supply of Wind, nor will the Clouds grow thick in too much Heat: But in the middle Quarters of the Year, all Things concur to make the Thunder roar. Thoſe Seaſons

Nam fretus ipſe anni permiſcet Frigus, & Æſtum:
Quorum utrumque opus eſt fabricanda ad Fulmina nobis,
Ut diſcordia ſit rerum, magnoque tumultu
Ignibus, & Ventis furibundus fluctuet Aër.
Prima Caloris enim pars, & poſtrema Rigoris,
Tempus id eſt Vernum: quare pugnare neceſſe'ſt.
Diſſimiles inter ſe res, turbareque miſtas.
Et Calor extremus primo cum Frigore miſtus
Volvitur, Autumni quod fertur nomine tempus.
Hîc quoque confligunt Hiemes Æſtatibus acres.
Propterea ſunt hæc Bella anni nominitanda:
Nec mirum'ſt in eo ſi tempore plurima fiunt
Fulmina, tempeſtaſque cietur turbida cælo,
Ancipiti quoniam bello turbatur utrinque,
Hinc Flammis, illinc Ventis, Humoreque miſto.
Hoc eſt igniferi naturam Fulminis ipſam
Perſpicere, & qua vi faciat rem quamque videre:
Non Tyrrhena retrò volventem carmina fruſtra
Indicia occultæ Divûm perquirere mentis,
Unde volans Ignis pervenerit, aut in utram ſe
Verterit hic partem, quo pacto per loca ſepta
Inſinuârit, & hinc dominatus ut extulerit ſe,
Quidve noſcere queat de cælo fulminis ictus.
Quòd ſi Jupiter atque alii fulgentia divi
Terrifico quatiunt ſonitu cæleſtia templa,
Et jaciunt igneis, quo cuique'ſt cumque voluptas,
Cur, quibus incautum ſcelus averſabile cumque'ſt,
Non faciunt, icti flammas ut Fulguris halent
Pectore perfixo, documen mortalibus acre?

Et

are made up of Heat and Cold blended together; of both theſe is formed the Thunder; that ſo theſe jarring Elements may raiſe the greater Combuſtions, and the tormented Air toſs with more Confuſion by the Strokes of Wind and Fire; for the End of Winter and the Beginning of Summer make the Spring: And then the Heat and Cold, two Enemies ſo oppoſite, muſt needs engage, and when they meet and mix, raiſe ſtrange Confuſions in the Air: And then the End of Summer and the Beginning of Winter bring on the Autumn; now the retiring Heat and coming Cold engage again. Theſe are the Times, we ſay, when the Elements go forth to war. Where is the Wonder, if loud Thunders roar in Seaſons ſuch as theſe, and dreadful Tempeſts rattle in the Sky, ſince the Elements rage every way with doubtful War, on one ſide Fire, on the other furious Winds with mingled Rain?

From hence you muſt collect the true Principles of Thunder, and diſcover how it works and ſends abroad its Fires; [m] for 'tis in vain to look back into old *Tuſcan* Legends, and from thence inquire into the ſecret Purpoſes of the *Gods*, from what Quarter of the Heavens the Lightning flies, and to what Part it points its forked Beams, and how it pierces through the Walls of Houſes, and having ſpent its Rage it finds a Paſſage out, and what Evil it portends by flaſhing from the Sky.

For if Great *Jupiter*, and the reſt of the *Gods*, delight to ſhake the ſhining Battlements of Heaven with horrid Noiſe, and throw about theſe Fires as pleaſe themſelves, why are not thoſe ſhot through who love to act flagitious Crimes, and why their Hearts not ſtruck with fiery Bolts, as dreadful Monuments

[m] Here the Poet inſults the College of Augurs and Soothſayers of *Rome*, who, from the *Tuſcans*, pretended to teach Divination as if it had been a Science.

Et potiùs nullæ ſibi turpis conſciu' rei
Volvitur in flammis innoxius, inque peditur,
Turbine cæleſti ſubitò conreptus & igni?
Cur etiam loca ſola petunt, fruſtaque laborant?
An con brachia ſuefaciunt, firmantque lacertos;
In terraque Patris cur telum perpetiuntur
Obtundi? cur Ipſe ſinit, neque parcit in hoſteis?
Denique, cur nunquam cælo jacit undique puro
Jupiter in terras Fulmen, ſonituſque profundit?
An ſimul ac Nubes ſucceſſere, Ipſe in eas tum
Deſcendit, propè ut hinc teli determinet ictus?
In Mare qua porro mittit ratione? quid undas
Arguit, & liquidam molem, campoſque natantes?
Præterea, ſi vult caveamus Fulminis ictum,
Cur dubitat facere, ut poſſimus cernere miſſum?
Si nec-opinanteis autem vult opprimere igni,
Cur tonat ex illa parte, ut vitare queamus?
Cur tenebras antè, & fremitus, & murmura concit?
Et ſimul in multas parteis quî credere poſſis
Mittere? an hoc auſis nunquam contendere factum,
Ut fierent ictus uno ſub tempore plures?
At ſæpe'ſt numero factum, fierique neceſſe'ſt,
Ut pluere in multis regionibus, & cadere Imbreis,
Fulmina ſic uno fieri ſub tempore multa.

Poſtremò,

to future Times? Why rather are the Good and Innocent ſcorched with theſe Blaſts, and tortured in the Flames, and caught up in theſe Whirlwinds of the Air, and in the Fire conſumed?

AND why do They ſpend their Shafts on ſolitary Places, and fatigue themſelves in vain? Is it to exerciſe their Arms, to try their Strength? Or why do they permit their Father's Bolts to be blunted againſt the bare Earth? Why does He ſuffer this himſelf, and not rather reſerve his Stores to blaſt his Enemies? Why does not *Jove* vouchſafe to roar with Thunder, and ſmite the Earth with his Bolts in a clear Sky? When the Clouds ſpread over the Heavens, does he deſcend within them, in order to be nearer, and to throw his Darts with a ſurer Aim? Why does he ſend his Fires upon the Sea? Why does he chaſtiſe the Waves, the wide Ocean, or the Plains cover'd with Water?

BESIDES, if He would have us avoid the Stroke of his Thunderbolts, why does not he contrive that we may ſee them as they fly? If He reſolves to blaſt us with his Fire before we are aware, why does he firſt flaſh out his Lightning from that Quarter whence his Bolts are to be diſcharged, that we may avoid them? Why does he give us Notice, by raiſing Darkneſs, Noiſes, and Murmurs in the Air?

AND then, how think you he is able to caſt ſo many Darts in many various Places at once? Will you offer to ſay this is never done, and inſiſt there are never more Darts than One flying about at the ſame Time? It is certain that Numbers of them are thrown together, and it cannot be otherwiſe; for as the Rain and the Showers fall upon many Countries at once, ſo many Strokes of Thunder are diſcharged at the ſame Time.

Poſtremò, cur ſancta Deûm delubra, ſuaſque
Diſcutit infeſto præclaras Fulmine ſedes:
Et bene facta Deûm frangit ſimulacra? ſuiſque
Demit imaginibus violento volnere honorem?
Altaque cur plerumque petit loca? plurimaque hujus
Montibus in ſummis veſtigia cernimus Ignis?

Quod ſupereſt, facile'ſt ex his cognoſcere rebus,
Πρηστῆρας *Graii quos ab re nominitârunt,*
In mare qua miſſi veniant ratione supernè.
Nam fit, ut interdum tanquam demiſſa columna
In mare de cœlo deſcendat, quam Fréta circum
Ferviſcunt graviter ſpirantibus incita flabris:
Et quæcunque in eo tum ſunt deprenſa tumultu
Navigia, in ſummum veniunt vexata periclum.
Hoc fit, ubi interdum non quit vis incita Venti
Rumpere, quam cœpit nubem; ſed deprimit, ut ſit
In mare de cœlo tanquam demiſſa columna.
Paullatim, quaſi quid pugno, brachiique ſupernè
Conjectu trudatur, & extendatur in undas:
Quam cùm diſcidit, hinc prorumpitur in mare Venti
Vis, & fervorem mirum concinnat in undis.
Verſabundus enim Turbo deſcendit, & illam
Deducit pariter lento cum corpore nubem.

In the laſt place: Why does He with his deadly Thunder beat down the ſacred Temples of the other *Gods*, and the ſtately Fabricks devoted to Himſelf? Why does he daſh to Pieces the curious Statues of the other Deities, and deſtroy with furious Strokes the Honours offered to his own Images? Why does he level his Shafts at lofty Places, for we diſcover many Traces of this Fire upon the Tops of higheſt Mountains?

It is eaſy, from what has been obſerved, to apprehend the Cauſe of thoſe Whirlwinds (which the *Greeks*, from the Nature of the Thing, juſtly call [n] *Præſters)* and how they deſcend from above, and fall into the Sea. They are ſometimes ſeen to deſcend from the Air into the Water like a Pillar; and the Sea, raging about with violent Blaſts of Wind, ſeems to boil, and is exceedingly toſſed; and whatever Ships are caught within the Reach of the Hurricane, are in the utmoſt Danger of being caſt away. This happens when the Force of the Wind, impetuouſly whirling within the Cloud, is not able to break it, but drives it on, ſo that it falls like a Column let down into the Sea. This Deſcent is gradual, as if it was thruſt by ſome Hand or Arm, and ſpread over the Waters. When the Cloud burſts, the Fury of the Wind breaks out among the Waves, and violently whirling round takes fire, and raiſes a wonderful Heat and Fermentation in the Waters; for a rolling Whirlwind deſcends with the Cloud, which being ſlow in its Motion, it bears along with it through the

[n] A *Præſter* (he obſerves) is a Wind impetuouſly whirled about, and that takes fire by the Continuance and Vehemence of the Agitation: If this Wind burſt out of the Clouds, and move violently in a ſtraight Line, it kindles into Lightning only; but if the Cloud be ſo tough that it cannot break through, but bears it down into the Sea, and there impetuouſly whirling round in the Waves at length takes fire, it becomes a *Præſter*, the ſure Deſtruction of Sailors.

Quam ſimul ac gravidam detruſit ad æquora Ponti,
Ille in aquam ſubitò totum ſe immittit, & omne
Excitat ingenti ſonitu Mare fervere cogens.
Fit quoque, ut involvat venti ſe nubibus ipſe
Vortex, conradens ex Aëre ſemina nubis,
Et quaſi demiſſum cælo Præſtêra imitetur.
Hic ubi ſe in terras demiſit, diſſolvitque:
Turbinis immanem vim promovit, atque procellæ.
Sed quia fit rarò omninò, monteiſque neceſſe 'ſt
Officere in Terris: appâret crebriùs idem
Proſpectu Maris in magno, cæloque patenti.
Nubila concreſcunt, ubi corpora multa volando
Hoc ſuper in Cæli ſpatio coïre repente
Aſperiora, modis quæ poſſint indupedita
Exiguis, tamen inter ſe comprenſa teneri.
Hæc faciunt primùm parvas conſiſtere Nubeis;
Inde ea comprendunt inter ſe, conque gregantur,
Et conjungendo creſcunt, ventiſque feruntur
Uſqueadeo, donec Tempeſtas ſæva coorta 'ſt.
Fit quoque uti Montis vicina cacumina cælo
Quàm ſint quæque magis, tantò magis edita fument
Aſſiduè fulvæ Nubis caligine craſſa;
Propterea, quia cùm conſiſtunt Nubila primùm,

Ante

the Air; and when it has thruſt the heavy Body of the Cloud into the Sea, it plunges furiouſly with it into the Water, and with a dreadful Noiſe ſets all the Element in a Blaze.

IT ſometimes happens that a Whirlwind, as it paſſes through the Air, will ſcrape off ſome Seeds from the Bodies of the Clouds; and rolling itſelf within, will look like a *Præſter* deſcending from above into the Sea. When this *Vortex* of Wind falls upon the Earth, it burſts out without being kindled into Flame; it whirls with mighty Force, and raiſes a Tempeſt, and bears down every thing before it. This ſort of Whirlwind is not common at Land; for the high Hills hinder its Deſcent, and break its Force; but it appears frequently in the wide Sea, and in the open Air.

NOW for the Origin of [o] Clouds: Theſe are formed when certain rough and hooked Seeds, as they fly about, at length unite in the higher Region of the Air that is above us; but are held together looſely, and not bound in any cloſe and ſtrict Embrace. Of theſe the thin and ſmall Clouds are firſt produced; and many of them meeting together, and preſſing cloſe, make the large and heavy Clouds, which the Winds drive every way abroad, till they break out into a raging Storm.

AND then, [p] the nearer the Tops of the Mountains approach the Sky, the higher they are, the more they ſmoke, and appear cover'd with the thick Darkneſs of a yellow Cloud; becauſe the Miſts that ariſe are ſo

[o] Certain rough and hooky Atoms, that are flying to and fro in the Air, meet and join together: Theſe form the thin Clouds firſt; and theſe thin Clouds condenſing and joining with one another, make the thick and heavy Clouds.

[p] Clouds frequently ſeem to riſe from the Tops of high Mountains, becauſe ſome thin Miſts and watery Steams, that are too ſubtle to be ſeen, are driven up thither by the Wind; where joining together, and growing thick, they become viſible.

thin

Ante videre oculi quàm poſſint tenuia, Venti
Portantes cogunt ad ſumma cacumina Montis.
Hîc demum fit, uti turba majore coorta,
Condenſa, ac ſtipata ſimul cernantur, & udo
Vertice de Montis videantur ſurgere in æthram.
“ *Nam loca declarat ſurſum ventoſa patere*
“ *Res ipſa, & ſenſus, Monteis cùm aſcendimus altos.*
Præterea, permulta Mari quoque tollere toto
Corpora Naturam, declarant littore veſtes
Suſpenſæ, cùm concipiunt humoris adhæſum.
Quò magis ad nubeis augendas multa videntur
Poſſe quoque è ſalſo conſurgere momine ponti.
Præterea, fluviis ex omnibus, & ſimul ipſa
Surgere de terra nebulas, æſtumque videmus:
Quæ velut halitus, hinc ita ſurſum expreſſa feruntur,
Suffunduntque ſua Cœlum caligine, & altas
Sufficiunt nubeis paullatim conveniundo.
Urget enim quoque ſigniferi ſuper Ætheris æſtus,
Et quaſi denſando ſubtexit cærula nimbis.
Fit quoque, ut hunc veniant in cœtum extrinſecus illa
Corpora, quæ faciunt Nubeis, nimboſq; volanteis.
Innumerabilem enim numerum, ſummamq; Profundi
Eſſe infinitam docui: Quantaque volarent
Corpora mobilitate, oſtendi, quàmque repente
Immemorabile per ſpatium tranſire ſolerent.
Haud igitur mirum 'ſt, ſi parvo tempore ſæpe
Tam magnos Monteis tempeſtas, atque tenebræ
Cooperiant Maria, ac Terras, impenſa ſuperne.
Undique quandoquidem per caulas ætheris omneis,

thin and ſubtle, that before they are diſcovered by the Eye, they are carried aloft by the Winds to the Tops of the higheſt Hills: And ſince they unite there in larger Bodies, and ſhew thick and condenſed, they ſeem to riſe from the Tops of theſe Hills into the Air; for when we aſcend a high Mountain, the Thing itſelf and Senſe demonſtrate, that the Winds tend to the higheſt Places, and reign there.

BESIDES, that Nature raiſes many Exhalations from the wide Sea, is plain, by obſerving, that Garments expanded upon the Shore will ſoon be wet; and therefore, to form ſuch vaſt Bodies of Clouds, many Seeds are thrown off and ariſe from the Motion of the ſalt Waters.

AND we ſee that Miſts and watery Particles riſe from all the Rivers, and from the Earth itſelf; which, like a Vapour, are from thence ſqueezed out and carried upwards, and cover the whole Heavens with Darkneſs; and uniting together by degrees, are ſufficient to produce the Clouds: For the Seeds that are continually deſcending from above in a confuſed Manner, continually beat theſe Miſts upon the Back, and by condenſing and preſſing them cloſe, form them into Clouds over all the Sky.

IT may be, likewiſe, that Seeds from without, from the immenſe Space of the Univerſe, may flow hither, and unite in the Production of the flying Clouds; for I have proved before, that theſe Seeds are without Number, and that the Void is Infinite. I have ſhewn how ſuddenly, and with what Celerity they paſs through this boundleſs Space. It is no wonder therefore, that Tempeſts and dark Clouds are in ſo ſhort a Time frequently ſpread over the whole Heavens, and cover the high Mountains, the Seas and the Earth, with ſo quick a Motion; ſince, from every Quarter, through all the Paſſages of the Air, through all the Breathing-

Et quaſi per magni circùm ſpiracula mundi
Exitus, introituſque elementis redditus extat.
Nunc age, quo pacto Pluvius concreſcat in altis
Nubibus humor, & in terras demiſſus ut Imber
Decidat, expediam. Primùm jam ſemina Aquaï
Multa ſimul vincam conſurgere nubibus ipſis
Omnibus ex rebus, pariterque ita creſcere utraſque,
Et Nubeis, & Aquam, quæcunque in nubibus extat,
Ut pariter nobis corpus cum ſanguine creſcit,
Sudor item atque humor quicunque eſt denique membris.
Concipiunt etiam multum quoque ſæpe marinum
Humorem, veluti pendentia vellera lanæ
Cùm ſupera magnum venti mare nubila portant.
Conſimili ratione ex omnibus amnibus humor
Tollitur in nubeis: quò cùm benè ſemina aquarum
Multa modis multis convenere undique adaucta:
Confertæ nubes vi venti mittere certant
Dupliciter: nam vis venti contrudit, & ipſa
Copia nimborum, turba majore coorta,
Urget, & è ſupero premit, ac facit effluere Imbreis.
Præterea, cùm rareſcunt quoque Nubila ventis,
Aut diſſolvuntur Solis ſuper icta calore:
Mittunt humorem pluvium, ſtillantque, quaſi igni
Cera ſuper calido tabeſcens multa liqueſcat.
Sed vehemens imber fit, ubi vehementer utroque
Nubila vi cumulata premuntur, & impete venti.
At retinere diu pluviæ, longumque morari
Conſuerunt, ubi multa fuerunt Semina aquarum;
Atque aliis aliæ Nubes, nimbique rigantes

Breathing-places, I may ſay, of the Univerſe, the Seeds can make their Way hither and unite, or withdraw and ſly away again.

AND now I ſhall explain in what Manner the Rain is formed within the Clouds above, and falls down in Showers upon the Earth. I ſhall firſt ſhew, that many Seeds of Rain are raiſed from every thing, together with the Clouds; and that they increaſe together, both the Clouds and the Rain contained within, in the ſame manner as the Blood increaſes in proportion with our Bodies, or as Sweat or any other Moiſture diffuſed through the Limbs. The Clouds likewiſe, like hanging Fleeces of Wooll, ſuck up many Particles of ſalt Water, when the Winds drive them over the open Sea: And by the ſame Rule a Quantity of Moiſture is raiſed into the Clouds from all the Rivers; and there theſe many Seeds of Waters meeting from all Parts, and uniting variouſly together, the Clouds being full, are obliged to diſcharge their Load of Moiſture for two Reaſons; either the Force of Winds drives them cloſe; or the Number of them, raiſed one above another, preſſes them down from above with their own Weight, and makes the Showers to pour down. *Rain.*

BESIDES, when the Clouds are made rare and thin by the Winds, or are diſſolved by the Heat of the Sun ſtriking upon them, they diſcharge their rainy Moiſture and drop, as Wax diſſolves and melts over a hot Fire.

BUT expect a violent Storm of Rain when theſe Clouds, heaped up, are preſſed, not only by their own Weight, but driven cloſe by the Stroke of Winds from without. *Storms.*

THE Rains uſed to confine us long at home, and to laſt for ſome Time, when there are Seeds of Moiſture in Abundance; when the dropping Clouds are raiſed on Heaps above, and are driven *Conſtant Showers.*

Inſuper, atque omni volgò de parte feruntur :
Terraque cùm fumans humorem tota rehalat.
Hinc ubi Sol radiis tempeſtatem inter opacam
Adverſa fulſit nimborum aſpergine contra :
Tum color in nigris exiſtit nubibus Arqui.
Cætera, quæ ſurſum creſcunt, ſurſumq; creantur:
Et quæ concreſcunt in nubibus omnia, prorſum
Omnia, Nix, Venti, Grando, gelidæque Pruinæ,
Et vis magna Geli, magnum duramen aquarum :
Et mora, quæ fluvios paſſim refrænat eunteis :
Perfacile'ſt tamen hæc reperire, animoque videre,
Omnia quo pacto fiant, quareve creentur,
Cùm benè cognôris, elementis reddita quæ ſint.
Nunc age, quæ ratio Terraï motibus extet,
Percipe : Et in primis Terram fac ut eſſe rearis
Subter item, ut ſupera'ſt ; Ventis, atque undique plenam
Speluncis, multoſque lacus, multaſque lacunas
In gremio gerere, & rupeis, deruptaque ſaxa :
Multaque ſub tergo Terraï flumina tecta
Volvere vi fluctus, ſubmerſaque ſaxa putandum'ſt.
Undique enim ſimilem eſſe ſui, res poſtulat ipſa.
His igitur rebus ſubjunctis, ſuppoſitiſque :
Terra ſupernè tremit magnis concuſſa ruinis
Subter, ubi ingenteis ſpeluncas ſubruit ætas,
Quippe cadunt toti montes, magnoque repente
Concuſſu, latè diſſerpunt inde tremores :
Et meritò, quoniam plauſtris concuſſa tremiſcunt
Tecta viam propter non magno pondere tota.
Nec minùs exſultant, ubi currus fortis equûm vis
Ferratos utrinque rotarum ſuccutit orbeis.

every way abroad; and when the Earth, thoroughly ſoaked, ſends back the Vapours into the Air.

AND when the Sun, in a dark Storm of Rain, ſtrikes with its Beams directly upon an oppoſite Cloud, full of Moiſture, then you ſee the Colours of the Rainbow drawn upon the black Clouds. *Rainbow.*

AND all other Appearances which are formed and increaſe in the upper Region of the Air, and all Meteors that are raiſed in the Clouds; the Snow, the Winds, the Hail, and chilling Froſts; and the ſtrong Ice, that hardens the Surface of the Waters, and ſtops and binds up the Current of the Rivers as they flow; it is eaſy to account for all theſe, and to apprehend their Cauſes, and how they are produced, if you conſider well the Virtue and Power of the Seeds from whence they ſpring.

LEARN now the Cauſe of Earthquakes: And firſt, you are to ſuppoſe that the Earth is the ſame below as it is above, that it is every way full of Winds and Caverns, and that it holds within its Bowels many Lakes, and Pools, and Rocks, and broken Stones. You muſt believe that many hidden Rivers flow with rapid Waves within, and roll the ragged Rocks along their Tide; for the Laws of Nature require that the Earth within and without ſhould be the ſame. *Earthquakes.*

THIS being premiſed and ſuppoſed: The Earth trembles and ſhakes above with dreadful Ruin, when Age has tumbled in theſe mighty Caverns; for then whole Mountains ſink, and in a Moment, with the horrid Shock, ſpread frightful Tremblings all abroad: And no wonder, ſince whole Houſes by the Highway-ſide will quake as Carts, with no great Weight, paſs through the Streets; and ſo they ſtart as Chariots ſwiftly drive with mettled Horſes, they ſhake at every Jumping of the Wheel.

Fit quoque, ubi magnas in aquæ, vaſtaſque lacunas
Gleba vetuſtate è terra provolvitur ingens,
Ut jactetur aqua, & fluctu quoque terra vacillet:
Ut vas in terra non quit conſtare, niſi humor
Deſtitit in dubio fluctu jactarier intùs.
Præterea, Ventus cùm per loca ſubcava terræ
Conlectus parti ex una procumbit, & urget
Obnixus magnis ſpeluncas viribus altas;
Incumbit tellus quò Venti prona premit vis:
Tum ſupera terram quæ ſunt exſtructa domorum,
Ad cœlumque magis quantò ſunt edita quæque,
Inclinata minent in eandem prodita partem:
Protractæque trabes impendent ire paratæ:
Et metuunt magni Naturam credere Mundi
Exitiale aliquod tempus, cladeṁque manere,
Cùm videant tantam Terrarum incumbere molem.
Quòd niſi reſpirent Venti, non ulla refrænet
Res, neque ab exitio poſſit reprendere eunteis:
Nunc quia reſpirant alternis, inque graveſcunt,
Et quaſi conlecti redeunt ceduntque repulſi.
Sæpius hanc ob rem minitatur Terra ruinas,
Quàm facit: inclinatur enim, retroque recellit,
Et recipit prolapſa ſuas ſe in pondere ſedeis:
Hac igitur ratione vacillant omnia tecta,
Summa magis mediis, media imis, ima perhilum.
Eſt hæc ejuſdem quoque magni cauſa tremoris,
Ventus ubi, atque Animæ ſubitò vis maxima quædam,

THIS happens likewiſe, when great Weights of Earth, looſen'd by Time, plunge down into theſe deep and mighty Lakes; for then the Waters rage, and the Earth reels and ſtaggers with the Shock; as a Veſſel on the Ground cannot ſtand firm, unleſs the Liquor ceaſes to ferment and toſs within.

BESIDES, when Winds, collected in the Caverns of the Earth, direct their Force one Way, and beat with Fury on theſe hollow Places, the Earth inclines that Way where the Winds point their Stroke; and our Buildings, raiſed above, nod that Way too; the Higheſt ſhake the moſt; the hanging Beams ſtart from the Wall, and threaten to fly out: And yet Men are afraid to think that Nature has fixed a fatal Time when this great World ſhall be deſtroyed, and fall to Ruin, although they ſee the heavy Maſs of Earth leaning and tumbling to Pieces. And did not the Winds take Time to breathe, nothing could check their Fury, or keep them from deſtroying every thing before them: But ſince they ceaſe by turns, then rage again, and ſtorm with double Force, and are again repelled. Hence it is that the Earth oftner threatens us with Ruin than actually effects it: It inclines only, and then falls back; and though moved aſide, ſettles with all its Weight again in its former Place. For this Reaſon all our Houſes tremble and reel; the Higheſt ſhake the moſt, the Middle leſs, the Loweſt little or nothing.

THE great [q] Tremblings of the Earth may ariſe yet from another Cauſe; when Wind or violent Blaſts

[q] This Inclination and fluctuating Motion of the Earth, is often attended with a violent Beating and Succuſſion of it; for if the Wind break through the Caverns, and cleave the Earth, then Cities, Iſlands, *&c.* with all their Inhabitants, are ingulphed and ſwallowed up in the hideous Chaſm; but if the Wind does not break through, there is then only a

 Trembling,

Aut extrinſecus, aut ipſa à tellure coorta
In loca ſe cava Terraï conjecit, ibique
Speluncas inter magnas fremit antè tumultu:
Verſabundaque portatur, poſt incita cùm vis
Exagitata foras erumpitur, & ſimul artam
Diffindens terram magnum concinnat hiatum:
In Tyria Sidone quod accidit, & fuit Ægis
In Peloponneſo: Quas exitus hic animaï
Diſturbât urbeis, & Terræ motus obortus!
Multaque præterea ceciderunt mœnia magnis
Motibus in terris, & multæ per mare peſſum
Subſedere ſuis pariter cum civibus urbes.
Quòd niſi prorumpit, tamen impetus ipſæ Animaï
Et fera vis Venti per crebra foramina terræ
Diſpertitur, ut Horror; & incutit inde tremorem:
Frigus uti noſtros penitus cùm venit in artus,
Concutit invitos cogens tremere atque moveri.
Ancipiti trepidant igitur terrore per urbeis:
Tecta ſuperne timent, metuunt inferne, cavernas
Terraï ne diſſolvat Natura repente:
Neu diſtracta ſuum latè diſpandat hiatum:
Idque ſuis confuſa velit complere ruinis.
  Proinde licet, quamvis cœlum terramque reantur
Incorrupta fore æternæ mandata ſaluti:
Attamen interdum præſens vis ipſa pericli
Subditat hunc ſtimulum quadam de parte timoris,
Ne pedibus raptim Tellus ſubtracta feratur

Blaſts (raiſed either from without or within the Earth itſelf) throw themſelves furiouſly into theſe hollow Caverns, and in theſe vaſt Dens roar and toſs themſelves about; and when they have rolled within, and raged with all their Might, they break abroad at laſt, and cleave the ſolid Earth, and make a hideous Chaſm. This happened at *Sidon*, a City of the *Tyrians*, and at *Ægæ* in *Peloponneſus*. What Cities has this Eruption of the Wind deſtroyed? What Earthquakes has it produced? At Land, the Walls of many Towns have tumbled down by theſe violent Concuſſions; and many Cities, with all its Inhabitants, have ſunk together into the Sea. But if the Wind does not break through, yet the Fury and raging Force of its Blaſts are ſcattered through the many Pores of the Earth like a ſhivering Cold, and cauſe a Shuddering in its Bowels; as the Cold, when it ſeizes upon our Limbs, makes us ſhake againſt our Will, and tremble all over. Then Men ſtagger with doubtful Fear in all the Cities; they are in dread of their Houſes above them, and of the Earth under their Feet; leſt Nature ſhould inſtantly break to Pieces the Caverns below; leſt the divided Earth ſhould open wide its Jaws, and fill them with the utter Deſolation of Men and Houſes.

Even Thoſe who think the Heavens and the Earth are Eternal, and will be preſerved ſafe for ever, yet the preſent Dread of impending Danger ſtaggers them, and raiſes terrible Apprehenſions, leſt the Earth ſhould inſtantly fail under their Feet, and ſink into the great Abyſs; leſt the Diſſolution of the Univerſe, from the very Founda-

Trembling, or as it were a Shuddering of the Earth, which is cauſed by the chilling Wind that is diffuſed through all its Pores.

In barathrum, rerumque ſequatur prodita Summa
Funditus, & fiat Mundi confuſa ruina.
Nunc ratio reddunda, augmen cur neſciat Æquor.
Principio, Mare mirantur non reddere majus
Naturam, quò tantu' fuat decurſus aquarum,
Omnia quò veniant ex omni Flumina parte.
Adde vagos imbreis, tempeſtateſque volanteis:
Omnia quæ maria, ac terras ſparguntque, rigantque.
Adde ſuos fonteis: tamen ad Maris omnia ſummam
Guttaï vix inſtar erunt unius ad augmen:
Quò minùs eſt mirum, Mare non augeſcere magnum.
Præterea, magnam Sol partem detrahit æſtu.
Quippe videmus enim veſteis humore madenteis,
Exſiccare ſuis radiis ardentibu' Solem.
At Pelage multa, & latè ſubſtracta videmus.
Proinde licet quamvis ex uno quoque loco Sol
Humoris parvam delibet ab æquore partem:
Largiter in tanto ſpatio tamen auferet undis.
Tum porro Venti magnam quoque tollere partem
Humoris poſſunt verrentes æquora ponti:
Una nocte vias quoniam perſæpe videmus
Siccari, molliſque luti concreſcere cruſtas.

Præterea,

tion, ſhould follow, and the Fabrick of the World ſhould fall into Ruin and Confuſion.

AND now we are to account why the Waters of the [r] Sea are never increaſed. And firſt, Men wonder that Nature does not inlarge the Bounds of the Sea, in proportion to the Falls of Water, and the Streams of ſo many Rivers that from all Parts flow into it; beſides the wandering Showers and flying Storms, that pour down and diſcharge themſelves upon the Land and Seas, you may add the Fountains and Springs likewiſe: But All Theſe, compared to the Vaſtneſs of the Sea, are hardly more than one Drop of Water, and therefore can contribute little to its Increaſe. No wonder then, that the wide Sea rolls within the ſame Bounds.

The Sea not increaſe.

AND then, the Sun licks up a great Part of its Water with its Heat; for we ſee the Sun dries a Garment, dropping wet, with its burning Rays. And the Sea, we know, is widely ſpread, and expoſed to the Influence of his Beams. And though the Sun draws up but a very little Quantity of Moiſture from every Part of the Sea, yet, within ſo vaſt a Circumference, a great Store of Water muſt be drawn off.

THE Winds likewiſe, bruſhing over the Surface of the Sea, carry off a large Part; for we obſerve the Roads are frequently dried in one Night, and the ſoft Dirt grows hard.

[r] The Sea does not increaſe, becauſe the Gulph into which the Rivers diſembogue their Streams, is ſo vaſt, that all their Waters, together with the Rain, Snow, Hail, *&c.* ſeem not to add one Drop to the Sea. The Sun drinks up a great deal of its Moiſture; the Winds bruſh off and carry away no ſmall Quantity; the Clouds take ſome away. As the Rivers run into the Sea, ſo they are re-conveyed from thence, from through the hidden Veins of the Earth, back to their own Springs. Thus the Waters roll in a revolving Courſe, and therefore no wonder the Sea does not increaſe.

BESIDES,

Præterea, docui multum quoque tollere Nubeis
Humorem magno conceptum ex æquore ponti:
Et paſſim toto terrarum ſpargere in orbe,
Cùm pluit in terris, & venti nubila portant.
Poſtremò, quoniam raro cum corpore Tellus
Eſt, & conjunctas oras maris undique cingit:
Debet, ut in mare de terris venit humor aquaï,
In terras itidem manare ex æquore ſalſo;
Percolatur enim virus, retròque remanat
Materies humoris, & ad caput amnibus omnis
Confluit: inde ſuper terras redit agmine dulci,
Quà via ſecta ſemel liquido pede detulit undas.
Nunc ratio quæ ſit, per fauceis montis ut Ætnæ
Exſpirent ignes interdum turbine tanto,
Expediam: neque enim media de clade coorta
Flammæ tempeſtas Siculûm dominata per agros
Finitimis ad ſe convertit gentibus ora,
Fumida cùm cœli ſcintillare omnia templa
Cernentes pavida complebant pectora cura,
Quid moliretur rerum Natura novarum.
Hiſce tibi rebus latè 'ſt, altèque videndum,
Et longè cunctas in parteis diſpiciendum,
Ut reminiſcaris, Summam rerum eſſe profundam,
Et videas, cœlum Summaï totius unum
Quàm ſit parvula pars, & quàm multeſima conſtet:
Et quota pars Homo Terraï ſit totius unus.
Quod bene propoſitum ſi planè contueare,
Ac videas planè; mirari multa relinquas.

BESIDES, I have ſhewn that the Clouds ſuck up a great deal of Moiſture from the wide Sea, and then ſcatter it down over the whole Earth, when the Rain falls, and the Winds drive the Clouds through the Sky.

LASTLY, Since the Earth is of a rare Contexture, and full of Pores, and every way ſurrounds the Body of the Sea which joins to it, it follows that, as the Waters flow from the Earth into the Sea, ſo they muſt return from thence into the Earth again. In theſe ſubterraneous Paſſages the ſaline Particles are ſtrained off, and the Waters flow back, and unite together at the Fountain Heads; from whence they glide ſweetly, with their collected Strength, over the Earth, through thoſe Channels where the Streams firſt cut their liquid Way.

The Burning of Mount Ætna.

NOW learn the Cauſe why Fires break out, with ſo much Fury, from the Jaws of Mount *Ætna*; for we are not to ſuppoſe, ſuch a Tempeſt of Fire rages over the Plains of *Sicily*, and brings ſuch Deſtruction with it from the *Gods*, as if it only raiſed the Admiration of all the neighbouring People, who ſeeing the whole Heavens ſparkling with Fire, and full of Smoke, trembled with anxious Concern, and wonder'd what new *Phænomenon* Nature was going to produce. The Reaſon of theſe Events requires a deeper and a wider Search. You muſt enter further into all their Parts, and then you will recollect that the Univerſe of Things is Infinite; and obſerve how ſmall a Part (ſcarce one of a Thouſand) is one Heaven, in compariſon of the Whole, and what a poor Pittance of the whole Earth is one Man. If you conſider this well, and obſerve cloſely, you will ceaſe wondering at many Things which now raiſe your Admiration.

FOR

Num quis enim noſtrûm miratur, ſiquis in artus
Accepit calido Febrim fervore coortam,
Aut alium quemvis Morbi per membra dolorem ?
Obturgeſcit enim ſubito Pes, arripit acer
Sæpe dolor Denteis, oculos invadit in ipſos :
Exiſtit ſacer Ignis, & urit corpore ſerpens
Quamcunque arripuit partem, repitque per artus.
Nimirum, quia ſunt multarum Semina rerum :
Et ſatis hæc Tellus nobis Cælumque mali fert,
Unde queat vis immenſi procreſcere morbi.
Sic igitur toti cælo, terræque putandum'ſt
Ex infinito ſatis omnia ſuppeditare,
Unde repente queat Tellus concuſſa moveri,
Perque mare, & terras rapidus percurrere Turbo,
Ignis abundare Ætnæus, flammeſcere Cælum.
Id quoque enim fit, & ardeſcunt cæleſtia templa,
Ut Tempeſtates pluviæ graviore coortu
Sunt, ubi fortè ita ſe tetulerunt Semina aquarum.
At nimis eſt ingens Incendî turbidus ardor.
Scilicet, & fluvius, qui non eſt, maximus eii'ſt
Qui non antè aliquem majorem vidit : & ingens
Arbor, Homoque videtur : & omnia de genere omni,
Maxima quæ vidit quiſque, hæc ingentia fingit :
Cùm tamen omnia cum Cælo, Terraque, Marique
Nil ſint ad Summam Summaï totius omnem.
Nunc tamen, illa modis quibus inritata repentè
Flamma foràs vaſtis Ætnæ fornacibus efflet,

FOR where is the Wonder with any of Us, if a Man receives the burning Heat of a Fever within his Veins, or feels the Anguiſh of any other Diſeaſe in his Limbs? For our Foot often ſwells of a ſudden; a ſharp Pain frequently ſeizes upon our Teeth, and attacks our Eyes. There is ſuch a Thing as the [s] *Holy Fire*, that ſpreads over the Body, and burns the Part it fixes upon, and creeps over the Limbs. Nothing ſtrange! for the Seeds of Things are in great Abundance, and the Earth and the Heavens afford ſufficient Supplies of hurtful Seeds, from whence the ſharpeſt Diſeaſes may be produced in Us: And therefore you muſt think, that large Store of Seeds may flow from the Infinite Space, and ſupply the Earth and the whole Heavens. Theſe may cauſe thoſe ſudden and violent Tremblings of the Earth, that rapid Whirlwinds ſcour along the Land and Sea, and that there is abundant Fuel for the Flames of *Ætna*, and that the Sky is all in a Blaze; for this happens, and the Heavens are on fire, when the Seeds of Flame unite, as the Storms of Rain are the more violent when the Seeds of Water are collected and joined together.

BUT you will ſay, the Fire of *Ætna* is too great and impetuous. By the ſame Rule a River, not very large, appears a mighty Stream to one who never ſaw a greater; and ſo a Man or a Tree ſeems prodigious; and all other Bodies that we ſee, we imagine are extraordinary; when, alas! all Beings, with the Heavens, the Earth, and the Sea together, are nothing to the vaſt Univerſe of All.

The Breaking out of Flames.

AND now I ſhall explain by what Means the raging [t] Flame burſts ſuddenly abroad from the vaſt fiery

[s] Commonly called *St. Anthony*'s *Fire*.

[t] The Eruption from Mount *Ætna* is cauſed by the Force of Wind. The Seeds of that Wind come from the Infinite Univerſe,

Expediam. Primùm totius ſubcava montis
Eſt natura, ferè ſilicum ſuffulta cavernis:
Omnibus eſt porro in ſpeluncis Ventus & Aër.
Ventus enim fit, ubi eſt agitando percitus Aër.
Hic ubi percaluit, calefecitque omnia circum
Saxa furens, quà contingit, Terramque: & ab ollis
Excuſſit calidum flammis velocibus ignem:
Tollit ſe, ac rectis ita faucibus ejicit altè,
Funditque ardorem longè, longèque favillam
Differt, & craſſa volvit caligine fumum:
Extruditque ſimul mirando pondere ſaxa:
Ne dubites, quin hæc Animaï turbida ſit vis.
Præterea, magna ex parti Mare montis ad ejus
Radices frangit fluctus, æſtumque reſorbet.
Ex hoc uſque mari Speluncæ Montis ad altas
Perveniunt ſubter fauceis: Hàc ire fatendum'ſt,
“ *Et penetrare mari penitus res cogit aperto:*
Atque efflare foras, ideoque extollere flammas,
Saxaque ſubjectare, & arenæ tollere nimbos.
In ſummo ſunt ventigeni Cratêres, ut ipſi
Nominitant, Nos quas Fauceis perhibemus, & Ora.
Sunt aliquot quoque res, quarum unam dicere cauſam
Non ſatis eſt, verùm plureis, unde una tamen ſit.

fiery Entrails of this Mountain. And firſt, Nature has formed the whole Mountain hollow within, and ſupports theſe Cavities by Arches of Stone. Now all Caverns are filled with Wind and Air; for Air, when it is violently moved, becomes Wind; and this Wind, when it is grown hot, and, furiouſly whirling about, has inflamed the Stones and the Earth by beating upon them, and from them has ſtruck out Sparks of Fire with rapid Flame, then it raiſes itſelf up, and throws itſelf violently, out of the open Jaws at the Top, into the Air; then it pours the Fire abroad, and ſpreads the burning Embers all about, and belches duſky Clouds of rolling Smoke, and ſhoots out Rocks of wondrous Weight. This, no doubt, is done by furious Blaſts of Wind within.

BESIDES, the Sea, for a great Way, daſhes its Waves againſt the Roots of this Mountain, and then again ſucks up its Tide. The Waters preſs into theſe Caverns that lie directly under thoſe open Jaws above; this you muſt allow; and the Flames, yielding to the driving Flood, there force their Paſſage out, and fly abroad, and caſt the Fire on high, and throw out Rocks, and raiſe whole Clouds of Sand; for on the Summit there are certain Baſons, where Wind is generated: The *Greeks* call them ſo; we call them *Mouths* and *Jaws*.

THERE are ſome Things, obſerve, for which it is not ſufficient to aſſign one Reaſon, but many;

Univerſe, and gathering together in the Mountain, drive out either the Flames that lurk within the Bowels of the Mountain, or thoſe they ſtrike and force out from the very Stones of it; or elſe that Wind ruſhes in at the Hollows that are at the Foot of the Mountain, and whoſe Entrances are open, when the ebbing Sea leaves the Shore (for the Sea waſhes the Foot of the Mountain) and blows out the Flames. He ſays, at laſt, that Winds are bred in the very Hollows of the Mountain. And then he gives many Reaſons; that, among them, one at leaſt may be true and certain.

out

Corpus ut exanimum ſi quod procul ipſe jacere
Conſpicias Hominis: fit ut omneis dicere cauſas
Conveniat lethi, dicatur ut iſtius una.
Nam neque cum ferro, neque frigore vincere poſſis
Interiiſſe, neque à morbo, neque fortè veneno:
Verùm aliquid genere eſſe ex hoc, quod Concio dicat,
Scimus: Item in multis hoc rebus dicere habemus.
Nilus in æſtati creſcit, campiſque redundat
Unicus in terris Ægypti totius amnis.
Is rigat Ægyptum medium per ſæpe calorem,
Aut quia ſunt æſtate Aquilones oſtia contra
Anni tempore eo, quo Eteſia flabra feruntur:
Et contra fluvium flantes remorantur, & undas
Cogentes ſurſus replent, coguntque manere.
Nam dubio procul hæc adverſo flabra feruntur
Flumine, quæ gelidis à ſtellis Axis aguntur.
Ille ex æſtifera parti venit amnis ab Auſtro
Inter nigra virûm, percoctaque ſæcla calore,
Exoriens penitùs media ab regione diëi.
Eſt quoque, uti poſſit magnus congeſtus arenæ
Fluctibus adverſis oppilare oſtia contra,

out of which One only is the True : As when you ſee the dead Body of a Man, lying at a Diſtance upon the Ground, you are to recollect all the Cauſes which poſſibly might occaſion his Death, in order to find out the right ; for you cannot directly ſay, whether he died by the Sword, or by Cold, or by Diſeaſe, or perhaps by Poiſon, though we know it was by one of theſe, and every one thinks ſo. The ſame Method you are to obſerve in many other Caſes.

The Overflowing of Nile.

THE *Nile*, the only [u] River in all *Egypt*, increaſes in the Summer, and overflows the Fields. It waters the Country of *Egypt* about the middle of Summer, either becauſe in Summer the North Winds are oppoſite to the Mouths of the River, at the Seaſon when the *Eteſia's* blow, and beating hard againſt the Stream ſtop the Current, and driving the Waters upwards fill the Channel, and force back the Flood ; for without doubt thoſe Northern Winds blow directly againſt the Tide. The River flows from the warm Climate of the South, and divides the Country of the black *Æthiopians*, that are thoroughly ſodden with the Sun's Heat, and riſes far in the moſt Southern Part of the World.

AND it may be, that great Heaps of Sand, that are raiſed againſt the Stream, choak the

[u] He aſſigns natural Cauſes for the Overflowing of the *Nile*. He ſays, firſt, that the *Eteſian* or Annual Winds, which blow conſtantly from the North, at a certain Seaſon of the Year, repel and drive back the Stream of the River that comes from the South, and are the Cauſe that it fills up its Channel, and overflows its Banks. If it ſhould be objected, that the *Eteſian* Wind (for Winds are light Bodies) is too weak to ſtop ſo great a Weight of Waters, he adds, that the Sands which the Sea, being agitated by thoſe Winds, caſts into the Mouths of the *Nile*, choak them up, and thus cauſe the Inundation. He adds two other Reaſons ; the Rains that fall at the Sources of the River, and the Melting of the Snows.

Cùm Mare permotum ventis ruit intus arenam.
Quo fit uti pacto liber minùs exitus amni,
Et proclivus item fiat minùs impetus undis.
Fit quoque, uti pluviæ forſan magis ad caput ejus
Tempore eo fiant, quo Eteſia flabra Aquilonum
Nubila conjiciunt in eas tunc omnia parteis.
Scilicet ad mediam regionem ejecta diei
Cùm convenerunt, ibi ad altos denique monteis
Contruſæ nubes coguntur, vique premuntur.
Forſit & Æthiopum penitus de montibus altis
Creſcat, ubi in campos albas deſcendere ningueis
Tabificis ſubigit radiis Sol omnia luſtrans.
Nunc age, Averna tibi quæ ſint loca cumque lacuſque,
Expediam, quali natura prædita conſtent.
Principiò, quòd Averna vocantur, nomen id ab re
Impoſitum'ſt, quia ſunt Avibus contraria cunctis,
E regione ea quòd loca cùm advenere volantes,
Remigii oblitæ pennarum vela remittunt,
Præcipiteſque cadunt molli cervice profuſæ
In terram, ſi fortè ita fert natura locorum:
Aut in aquam, ſi fortè lacus ſubſtratus Averno'ſt.
Qualis apud Cumas locus eſt montemque Veſevum,
Oppleti calidis ubi fumant fontibus auctus.
Eſt & Athenæis in mœnibus, arcis in ipſo

Vertice,

Mouths of the River, when the Sea, by the Violence of the Winds, drives the Sand into the Channel, and ſtops it up. By this means the Paſſages of the River are more confined, and the Current of the Water is ſlower and of leſs Force.

OR perhaps the Rains are more violent near the Head of the River, at that Seaſon of the Year when the *Eteſian* Winds blow from the North, and drive all the Clouds to the more Southern Parts. When the Clouds meet in that warm Quarter, they are condenſed and preſſed hard againſt the high Mountains, and by that Force the Rain is ſqueezed out.

OR, laſtly, the Increaſe of the River may proceed from the high Mountains of the *Æthiopians*, when the Sun, that ſearches all Things with his diſſolving Rays, forces the melted Snow to deſcend into the Plains.

AND now the Nature of that Place or Lake we call [x] *Avernan*, I ſhall next explain. And firſt, It takes its Name from its Effect, becauſe 'tis fatal to the Life of Birds; for when the Feather'd-kind fly to this Place, their Flight is ſtopped, they flutter in the Air, and fall with hanging Wing and bended Head upon the Earth, if haply it be Earth, or in the Water if it be a Lake. At *Cumæ* there is a Place like This, and on the Mount *Veſuvius*, which, filled with burning Sulphur, throws out Smoke. Another of the ſame there is within the Walls of *Athens*, upon the Top *The Averni.*

[x] One of theſe *Averni* is at *Cumæ*, another near *Minerva*'s Temple in *Athens*, and a Third in *Syria*. Theſe Places were ſuppoſed to be the Entrances to Hell to the Palace of *Pluto*, and through them the *Manes* or Souls of the Dead are ſaid to paſs to the ſubterraneous Abodes. They were ſo called from the *Greek* Ἄορνος, derived from the Privative Particle ἀ, and ὄρνος a Bird; becauſe the noxious Vapours that exhaled from the *Averni* were ſo poiſonous, that they ſtruck dead the Birds that flew over them.

Vertice, Palladis ad templum Tritonidos almæ,
Quò nunquam pennis appellunt corpora raucæ
Cornices, non cùm fumant Altaria donis :
Uſqueadeo fugitant non iras Palladis acreis
Pervigilî cauſa, Graiûm ut cecinere poetæ :
Sed natura loci hoc opus efficit ipſa ſua vi.
In Syria quoque fertur item locus eſſe, videri,
Quadrupedes quoque quò ſimul ac veſtigia primùm
Intulerint, graviter vis cogat concidere ipſa,
Manibus ut ſi ſint Divis mactata repente.
Omnia quæ naturali ratione geruntur,
Et quibus è cauſis fiant, apparet origo :
Janua ne his Orci potiùs regionibus eſſe
Credatur pôſta, hinc Animas Acheruntis in oras
Ducere fortè deos Maneis infernè reamur :
Naribus alipedes ut Cervi ſæpe putantur
Ducere de latebris ſerpentia ſæcla ferarum.
Quod procul à vera quàm ſit ratione repulſum,
Percipe, namque ipſa de re nunc dicere conor.
Principiò hoc dico, quod dixi ſæpe quoque ante,
In Terra cujuſque modi rerum eſſe figuras :
Multa homini quæ ſunt vitalia : multaque morbos
Incutere, & Mortem quæ poſſint accelerare :
Et magis eſſe aliis alias Animantibus aptas
Res ad vitaï rationem oſtendimus ante,
Propter diſſimilem naturam, diſſimileiſque
Texturas inter ſeſe, primaſque figuras :
Multa meant inimica per aureis, multa per ipſas
Inſinuant nareis infeſta atque aſpera odore :
Nec ſunt multa parùm tactu vitanda, nec autem
Aſpectu fugienda, ſaporeque triſtia quæ ſint.
Deinde videre licet quam multæ ſint Homini res
Acriter infeſto ſenſu, ſpurcæque, graveſque.

of that high Tower, near which the kind *Tritonian Pallas* has her Temple: Here the hoarſe Ravens never ſteer their Flight, not when the Altars ſmoke with ſlaughter'd Victims: They do not ſhun this Tower to fly the Rage of angry *Pallas* for their officious Care, as [y] *Grecian* Poets ſing; but 'tis the noxious Nature of the Place that drives them hence.

THEY ſay there's ſuch a Place as This in *Syria*; where Beaſts no ſooner venture with their Feet, but the pernicious Vapour ſtrikes them dead, as if by ſudden Stroke they fell a Sacrifice to the Infernal *Gods*. All theſe Things proceed from natural Cauſes; and what theſe Cauſes are will ſoon appear, by tracing out their Principles; leſt you ſhould think in Places ſuch as Theſe Hell-Gates are fixed, and fancy that the *Gods* below draw through theſe Paſſages departed Souls into the Infernal Shades; as the ſwift Deer are ſaid by Smelling to draw out the lurking Serpents from their Holes. But how abſurd to Reaſon are ſuch Thoughts, obſerve, for now I am going to explain.

AND firſt, I ſay, as I have often ſaid before, that in the Earth are Seeds of Things of every Shape; many that prolong the Life of Man, and many that inflict Diſeaſe and haſten Death. And I have ſhewn that there are other Seeds peculiarly diſpoſed to ſerve the Uſe of other Creatures, and ſupport their Life; becauſe theſe Seeds are different in their Nature, they vary in their Texture and their Shape. Many hurtful Seeds paſs through the Ears, and many ſharp and ſtinking Seeds affect the Noſe; ſome are offenſive to the Touch, ſome to be avoided by the Sight, and others bitter to the Taſte. And thus you ſee how many Things there are deadly, diſtaſteful, odious to the Senſe.

[y] This refers to the Story of *Coronis* in *Ovid*'s *Metamorph. lib.* ii.

Arboribus primùm certis gravis umbra tributa 'ſt,
Uſqueadeo, capitis faciant ut ſæpe dolores,
Si quis eas ſubter jacuit proſtratus in herbis.
Eſt etiam in magnis Heliconis montibus arbos
Floris odore hominem tetro conſueta necare.
Scilicet hæc ideo Terris ex omnia ſurgunt
Multa modis multis multarum Semina rerum,
Quòd permiſta gerit Tellus, diſcretaque tradit.
Nocturnumque recens extinctum Lumen, ubi acri
Nidore offendit nareis conſopit ibidem,
Dejicere ut pronos qui morbus ſæpe ſuëvit.
Caſtoreoque gravi Mulier ſopita recumbit,
Et manibus nitidum teneris opus effluit eij,
Tempore eo ſi odorata 'ſt quo menſtrua ſolvit.
Multaque præterea languentia membra per artus
Solvunt, atque Animam labefactant ſedibus intus.
Denique, ſi in calidis etiam cunctere lavacris,
Plenior & ſolio in fueris ferventis aquaï :
Quàm facilè in medio fit uti des ſæpe ruinas ?
Carbonumque gravis vis, atque odor inſinuatur
Quam facilè in cerebrum, niſi aquam præcepimus antè ?
At cùm membra hominis percepit fervida febris,
Tum fit odor Vini plagæ mactabilis inſtar.
Nonne vides etiam terra quoque Sulfur in ipſa
Gignier ? & tetro concreſcere odore Bitumen ?
Denique ubi Argenti venas, Aurique ſequuntur,
Terraï penitus ſcrutantes abdita ferro ;

Qualeis

Some [z] Trees are ſo pernicious by their Shade, that they affect the Head with grievous Pain, if one lies on the Graſs beneath the Boughs.

THERE is a Tree that grows on the high Hill of *Helicon*, whoſe Bloſſoms by their Smell give preſent Death; for in the Earth are Seeds of every Kind, variouſly mixed, which She with curious Art ſeparates, and applies to Things, as each in its own Nature moſt requires.

A LAMP, juſt extinguiſhed, is by its Smell ſo offenſive to the Noſe, that it ſtupifies, as if a Man were ſtruck down by a Fit of an Apoplexy.

A WOMAN will fall dead aſleep at the nauſeous Smell of an Ointment, made of the Teſticles of the Beaver; her fine Work will drop from her tender Fingers, eſpecially if ſhe ſmells it when her Fluors are upon her.

BESIDES, there are many Things that intirely diſſolve the feeble Limbs all over the Body, and ſhake the very Soul within out of her Place.

IF you ſtay long in a warm Bath, and continue in the Veſſel of hot Water when the Belly is full, how apt will you be to faint before you get out?

THE ſuffocating Power of Charcoal, and its ſtifling Smell, how ſoon do they find a Paſſage into the Brain, unleſs you have drank plentifully of Water before?

WHEN a burning Fever has ſeized upon the Limbs, the Smell of Wine is like a Stroke that takes away the Senſe.

DON'T you obſerve likewiſe, that Sulphur and Bitumen, with its noxious Smell, are generated in the Bowels of the Earth itſelf?

AND ſo, when Men perſue the Veins of Gold and Silver, and with their Tools dig in the very

[z] *Pliny*, *lib.* xvii. *cap.* 12. ſays, that the Shade of the Walnut-tree offends the Head, and that no Plants will thrive under it.

Qualeis exſpirat Scapteſula ſubter odores?
Quidve mali ſit ut exhalent Aurata metalla?
Quas Hominum reddunt facies? qualeiſque colores?
Nonne vides, audiſve perire in tempore parvo
Quàm ſoleant, & quàm vitaï copia deſit,
Quos opere in tali cohibet vis magna? neceſſe'ſt
Hos igitur tellus omneis exæſtuet æſtus;
Expiretque foras in aperta, promptaque Cæli.
Sic & Averna loca Alitibus ſummittere debent
Mortiferam vim, de terra quæ ſurgit in auras,
Ut ſpatium cæli quadam de parte venenet:
Quò ſimul ac primùm pennis delata ſit Ales,
Impediatur ibi cæco conrepta veneno,
Ut cadat è regione loci, quà dirigit æſtus:
Quò cùm conruit, hæc eadem vis illius æſtus:
Relliquias vitæ membris ex omnibus aufert.
Quippe etenim primò quaſi quendam conciet æſtum:
Poſteriùs fit, uti cùm jam cecidere veneni
In fonteis ipſos, ibi ſit quoque Vita vomenda,
Propterea quòd magna mali ſit copia circùm.
Fit quoque ut interdum vis hæc, atque æſtus Averni,
Aëra, qui inter aveis cunque'ſt terramque locatus,
Diſcutiat, propè uti locus hinc linquatur inanis:
Cujus ubi è regione loci venêre volantes,
Claudicat extemplo pennarum niſus inanis:
Et conamèn utrinque alarum proditur omne.
Hic ubi nictari nequeunt, inſiſtereque alis,
Scilicet in terram delabi pondere cogit
Natura; & vacuum propè jam per inane jacentes
Diſpergunt Animas per caulas corporis omneis.
Frigidior porrò in puteis Æſtate fit Humor,
Rareſcit quia Terra calore, & ſemina ſiqua
Fortè vaporis habet, properè dimittit in auras.
Quò magis eſt igitur Tellus affecta calore:
Hoc fit frigidior, qui in terra'ſt abditus, Humor.

Frigore

Entrails of the Earth, what hurtful Vapours do the Mines exhale? What deadly Damps flow from the golden Ore? How wretchedly the Miners look? How wan their Colour? Have you not ſeen or heard how ſoon they die, how ſhort their Life is who are condemned to this ſad Servitude? The Earth then muſt needs belch out theſe poiſonous Exhalations, and ſend them all abroad, and taint the open Air.

THE *Averni* thus throw out theſe deadly Steams, ſo fatal to the Birds. They riſe out of the Earth into the Air, and to ſome Diſtance blaſt the lower Skies. Here, when the Bird arrives upon the Wing, this latent Poiſon ſeizes on his Blood; his Flight is ſtopt, and down he falls; the Force of theſe Effluvia carries off the ſmall Remains of Life from all his Limbs, and ſtrikes him dead. Theſe Vapours firſt excite a ſort of Boiling in all his Veins; and when he drops into the Fountain whence the Poiſon ſprings, he dies; for there the noxious Vapours rage the moſt.

OR elſe, ſometimes, the Force and riſing Blaſts of theſe *Averni* diſpel the Air that lies between the Birds and the Earth, and the intermediate Space becomes a Void. Here, when the Birds are carried by their Flight, immediately they flutter in the Air, they clap their Wings in vain, their Pinions flag, and when they can no longer bear them up, Nature muſt drive them down upon the Earth with all their Weight; and as they, helpleſs, in the *Vacuum* lie, they breathe their Soul abroad through every Pore.

Wells cold in Summer.

THE Water in ſome Wells, we find, is cold in Summer; becauſe the Earth is rarefied by the Sun's Heat, and by that means the Seeds of Fire it contains within, break ſwiftly out into the Air: And therefore the more the Earth is affected by the Heat, the colder will the Water be that is incloſed

Frigore cùm premitur porro omnis terra, coitque,
Et quaſi concreſcit: Fit ſcilicet, ut coëundo
Exprimat in puteos, ſiquem gerit ipſa, Calorem.
Eſt apud Ammonis fanum fons luce diurna
Frigidus, at calidus nocturno tempore fertur:
Hunc homines fontem nimis admirantur, & acri
Sole putant ſubter terras ferviſcere raptim,
Nox ubi terribili terras caligine texit:
Quod nimis a vera'ſt longè ratione remotum:
Quippe ubi Sol nudum contrectans corpus aquaï,
Non quierit calidum ſupera de reddere parte,
Cùm ſuperum lumen tanto fervore fruatur:
Quî queat hic ſubter tam craſſo corpore terram,
Percoquere humorem, & calido ſociare vapori?
Præſertim cùm vix poſſit per ſepta domorum
Inſinuare ſuum radiis ardentibus æſtum?
Quæ ratio eſt igitur? nimirum terra magis quòd
Rara tenet circum hunc Fontem, quàm cætera tellus.
Multaque ſunt ignis propè ſemina corpus aquaï.
Hinc, ubi roriferis terram nox obruit umbris,
Extemplò ſubtus frigeſcit terra, coitque.
Hac ratione fit, ut, tanquam compreſſa manu ſit,
Exprimat in Fontem, quæ Semina cumque habet ignis,
Quæ calidum faciunt laticis tactum atque ſaporem.
Inde ubi Sol radiis terram dimovit obortis,
Et rarefecit calido miſcente vapore:

incloſed within. But when the Earth is contracted with the Cold, when its Surface grows cloſe, and its Pores are ſtopped, this Reſtraint hinders the Heat from flying out; it is then ſqueezed together into the Wells, and the Water becomes hot.

There is a Fountain, near the Temple of *Jupiter Ammon*, that is cold in the Day, and hot by Night. Men ſtrangely wonder at the Quality of this Spring, and imagine that when the Night has ſpread her dreadful Darkneſs o'er the World, the Water is warmed by the violent Heat of the Sun through the Body of the Earth. But this Reaſon is far from being true; for if the Sun, ſtriking upon the open Body of the Water, is not able to warm even the Surface of it, when it receives the Force of his deſcending Rays with all their Heat, how can He warm the Water, and infuſe his Heat through ſo thick a Body as the Earth; eſpecially, ſince he is ſcarce able, with his ſcorching Beams, to pierce through the Walls of our Houſes?

What then is the Reaſon? Doubtleſs This; becauſe the [a] Earth, near this Fountain, is more rare and ſpungy than it is in other Places, and contains within it many Seeds of Fire near the Body of the Water itſelf. Here, when the Night has ſpread the World with dewy Shades, the Earth below grows inſtantly cold, and is contracted; by this Means it is compreſſed, as with your Hand, and ſqueezes out thoſe Seeds of Fire into the Spring, which make the Water warm to Feel and Taſte. But when the Sun has driven away the Night with his bright Rays, and with his Heat has rarefied the Earth, and made it looſe, theſe Seeds of

[a] The Earth being compreſſed by the Cold of the Night, ſqueezes out and tranſmits into the Water thoſe Seeds of Heat, by means of which the Water grows hot; but being looſened by the Heat of the Day, ſhe receives again into her Bowels thoſe very ſame Seeds; and thus the Water becomes cold.

Fire

Rurſus in antiquas redeunt primordia ſedeis
Ignis, & in terram cedit calor omnis aquaï:
Frigidus hanc ob rem fit Fons in luce diurna.
Præterea, Solis radiis jactatur aquaï
Humor, & in luci tremulo rareſcit ab æſtu:
Propterea fit uti quæ ſemina cunque habet ignis,
Dimittat: quaſi ſæpe gelum, quod continet in ſe,
Mittit, & exoluit glaciem, nodoſque relaxat.
Frigidus eſt etiam Fons, ſupra quem ſita ſæpe
Stupa jacit flammas concepto protinus igni:
Tedaque conſimili ratione accenſa per undas
Conlucet, quocunque natans impellitur auris:
Nimirum quia ſunt in Aqua permulta vaporis
Semina, de Terraque neceſſe'ſt funditus ipſa
Ignis corpora per totum conſurgere Fontem,
Et ſimul exſpirare foras, exireque in auras,
Non tam viva tamen, calidus queat ut fieri Fons.
Præterea, diſperſa foras erumpere cogit
Vis per Aquam ſubitò, ſurſumque ea conciliari:
Quod genus endo mari ſpirat Fons, dulcis aquaï
Qui ſcatit, & ſalſas circum ſe dimovet undas.
Et multis aliis præbet regionibus æquor
Utilitatem oportunam ſitientibu' Nautis,
Quod dulceis inter ſalſas intervomit undas.
Sic igitur per eum poſſunt erumpere Fontem,
Et ſcatere illa foras in ſtupam Semina: quò cùm
Conveniunt, aut cùm tedaï corpori adhærent,

Fire return into their former Place, and all the Heat that warm'd the Spring retires within the Earth again; and ſo the Fountain in the Day is cold.

BESIDES, the Water in the Day is ſtrongly moved by the Sun's Rays, and by his trembling Streams of Heat grows rare, and ſo lets out the Seeds of Fire it held by Night; juſt as by the Heat it ſhakes off Seeds of Cold, and melts the Ice, and looſens all its Bonds.

THERE likewiſe is a cold Spring, over which if you place Tow or Flax, it immediately takes fire, and is all in a Blaze. A Torch, newly extinguiſhed, in the ſame manner, gently drawn over the Surface, is lighted by this Water, and flames out at every Breath of Air. And no wonder; for there are many Seeds of Fire in the Water itſelf, and many muſt needs riſe out of the Earth, and aſcend through all the Fountain, and flow abroad, and make their Way into the Air; but yet they are not ſo hot as to ſet the Spring on fire.

BESIDES, the innate Force of theſe Seeds, diſperſed through the Water, compels them to move upwards, and to unite upon the Surface; as we ſee ſometimes a Fountain of ſweet Water bubb'e up in the Middle of the Sea, and beat off the ſalt Waves that are about it. The Sea affords many of theſe Springs, that bring a ſeaſonable Relief to the thirſty Mariners, by throwing out Streams of freſh Water among the ſalt [b]. The Seeds of Fire may in the ſame manner break through the Water of this Fountain, and flow out into the Tow. Here, when they unite and ſtick to the Body of

[b] The Seeds of Fire riſing up to the Surface of the Water, may there be condenſed and gather'd together, in ſuch a manner, as to kindle any Combuſtibles that are apt to take fire, if they are advanced to them.

Ardeſcunt facilè extemplò: quia multa quoque in ſe
Semina habent ignis ſtupæ tedæque tenentes.
Nonne vides etiam, nocturna ad lumina Lychnum
Nuper ubi extinctum admoveas, accendier antè
Quàm tetigit flammam? tedamque pari ratione?
Multaque præterea, priùs ipſo tacta vapore
Eminus ardeſcunt, quàm cominus imbuat ignis.
Hoc igitur fieri quoq; in illo Fonte putandum'ſt.
Quod ſupereſt, agere incipiam quo fœdere fiat
Naturæ, Lapis hic ut ferrum ducere poſſit,
Quem Magneta vocant patrio de nomine Graii,
Magnetum quia ſit patriis in finibus ortus.

the Torch, they immediately fall into a Flame; for Flax and Tow contain many Seeds of Fire within, which make them eaſily diſpoſed to burn.

HAVE not you obſerved, when you hold a Candle newly extinguiſhed, to another that is lighted, it catches fire before it touches the Flame? A Torch likewiſe, by that ſame Rule, will do the ſame; and many other Things will take fire at a Diſtance, before the Flame reaches them. And this you may imagine is the Caſe of the Fountain abovementioned.

AND now I ſhall begin to ſhew by what Power of Nature it is that the Stone (which the *Greeks* call a [c] *Magnet*, from the Country that produces it, for it is found in the Region of the *Magnetes*) has the Virtue to attract Iron. *Of the Loadſtone.*

MEN

[c] The Poet, in order to explain the attractive Virtue of this Stone, premiſes four chief Poſitions, which though he has proved them already, yet he thinks fit to inculcate again in this Place. 1. That certain Corpuſcles are continually flowing off from all Things. 2. That no concrete Body is ſo ſolid as not to contain ſome empty little Spaces. 3. That the Corpuſcles that are emitted from Things, do not agree with all Things alike, and in the ſame manner, and produce not the ſame Effects on them. 4. That the void little Spaces are not alike in all Things, but differ in Size and Figure, and therefore cannot be fit for all Bodies indifferently. This being premiſed, he proceeds to explain how the Loadſtone attracts Iron, or the Iron is conveyed to the Loadſtone. Many Particles (he ſays) flow from the Loadſtone, and diſſipate the Air all around it; and thus many void little Spaces are made. But when the Iron is placed within the Sphere of that diſſipated Air, there being a great deal of empty Space between that and the Loadſtone, the Corpuſcles of the Iron leap more freely forward into that Void (for the Seeds of all Bodies fly forward on a ſudden into the empty Space) and for that Reaſon are carried towards the Loadſtone. Now they cannot tend that Way, without dragging along with them their coherent Seeds (for the Seeds of Iron are moſt intricately intangled and twined together) and conſequently the whole Maſs of Iron. But becauſe the Iron moves any way upwards, downwards, acroſs, or in any Obliquity, without the leaſt Diſtinction, according as it is placed to the Loadſtone, he ſays,

Hunc homines Lapidem mirantur, quippe catenam
Sæpe ex annellis reddit pendentibus ex ſe.
Quinque etenim licet interdum, plureiſque videre
Ordine demiſſos levibus jactarier auris,
Unus ubi ex uno dependet ſubter adhærens;
Ex alioque alius Lapidis vim, vinclaque noſcit:
Uſqueadeo permananter vis pervalet ejus.
Hoc genus in rebus firmandum'ſt multa priùs, quàm
Ipſius reij rationem reddere poſſis:
Et nimium longis ambagibus eſt adeundum:
Quò magis attentas aureis, animumque repoſco.
Principiò, omnibus à rebus, quaſcunque videmus,
Perpetuò fluere, ac mitti, ſpargique neceſſe'ſt
Corpora, quæ feriant oculos viſumque laceſſant:
Perpetuòque, fluunt cretis ab rebus odores,
Frigus ut à fluviis, Calor à ſole, Æſtus ab undis
Æquoris exeſor mœrorum littora propter:
Nec varii ceſſant ſonitus manare per Aures.
Denique in Os ſalſi venit humor ſæpe ſaporis,
Cùm mare verſamur propter; dilutaque contra
Cùm tuimur miſceri Abſinthia tangit Amaror:
Uſqueadeo omnibus ab rebus res quæque fluenter
Fertur, & in cunctas dimittitur undique parteis:
Nec mora, nec requies inter datur ulla fluendi,

Men are amazed at the Qualities of this Stone; for it will make a Chain of ſeveral little Rings of Iron, without a Link between, to hang together intirely from itſelf; you may ſometimes ſee Five or more hanging ſtraight down, and play in the gentle Air, as they ſtick cloſe and depend at the Bottom one upon another; the Ring that follows feels the Attraction and Power of the Stone from that above it. So ſtrongly is the Virtue of the *Magnet* communicated to the ſeveral Rings; it acts with ſo great a Force.

In Inquiries of this Nature many Things are to be firſt proved, before we can fix upon the true Cauſe; we muſt trace the Subject through many long and intricate Difficulties; and therefore I beg you will hear me with a willing Mind, and with the cloſeſt Attention.

And firſt, Certain Seeds muſt neceſſarily flow, be ſent out, and continually diſperſed abroad, from all Things whatever we ſee, which muſt ſtrike upon the Eye, and affect the Sight. From ſome Bodies a Train of Smells are alway flying off. So Cold is emitted from the Rivers; Heat from the Sun; a ſalt Vapour from the Water of the Sea, that eats through Walls along the Shore; and various Sounds are always flying through the Air. And as we walk upon the Strand, a briny Taſte frequently offends our Mouth; and when we ſee a Bunch of Wormwood bruiſed, the Bitterneſs ſtrikes upon the Palate. So plain it is that ſomething is continually flowing off from all Bodies, and is ſcattered all about. There is no Intermiſſion, the Seeds

ſays, that this could not be, but by reaſon that the empty Space that is made by Corpuſcles that flow from the *Magnet*, and into which all Bodies, that otherwiſe tend only downwards, are protruded indiſcriminately by the Strokes and Blows of other Bodies. This in general is what he obſerves concerning the Loadſtone.

Perpetuò quoniam ſentimus, & omnia ſemper
Cernere, Odorari licet, & ſentire Sonorem.
Nunc omnes repetam quàm raro corpore ſint res,
Commemorare, quod in primo quoque carmine claret.
Quippe etenim, quamquam multas hoc pertinet ad res
Noſcere, cum primis hanc ad rem protinus ipſam,
Qua de diſſerere aggredior, firmare neceſſe'ſt
Nil eſſe in promptu, niſi miſtum Corpus Inani.
Principio fit, ut in ſpeluncis ſaxa ſuperna
Sudent humore, & guttis manantibu' ſtillent:
Manat item nobis è toto corpore Sudor,
Creſcit barba, pilique per omnia membra, per artus:
Diditus in venas cibus omneis, auget, alitque
Corporis extremas quoque parteis unguiculoſque.
Frigus item tranſire per æs, calidumque vaporem
Sentimus: ſentimus item tranſire per aurum,
Atque per argentum, cùm pocula plena tenemus.
Denique per diſſepta domorum ſaxea voces
Pervolitant, permanat Odos, Friguſque, Vapoſque
Ignis: quin Ferri quoque vim penetrare ſuëvit,
Undique qua circum corpus lorica coërcet;
Morbida vis quæcunque extrinſecus inſinuatur.
Et tempeſtates terra cœloque coortæ
E cœlo emotæ terraque repente faceſſunt,
Quandoquidem nihil eſt, non raro corpore nexum.
Huc accedit, uti non omnia, quæ jaciuntur
Corpora cunque ab rebus, eodem prædita ſenſu,
Atque eodem pacto rebus ſint omnibus apta.
Principiò, Terram, Sol excoquit, & facit are:
At glaciem diſſolvit, & altis montibus altè
Exſtructas ningueis radiis tabeſcere cogit,
Denique cera lique ſcit in ejus poſta vapore,
Ignis item liquidum facit æs, aurumque reſolvit:
At coria, & carnem trahit, & conducit in unum.

Humor

never ceaſe to flow, becauſe the Senſe is continually affected, we ſtill continue to Feel, to See, to Smell and Hear.

Now I ſhall repeat what I have proved at large in the firſt Book of this Poem, that no Bodies are perfectly ſolid; for though it is proper to know this upon many Accounts, yet it is of principal Uſe in the Subject I now offer to explain. In this place it is neceſſary to eſtabliſh this Truth, that there is nothing in Nature but Body mixed with Void.

And firſt, In the deep Caverns of the Earth, the Rocks above will ſweat with Moiſture, and weep with flowing Drops; and Sweat will flow from all our Bodies, and through every Pore. The Beard will grow, and Hairs ſpread o'er our Members and our Limbs. Nature divides our Food through all the Veins; it feeds and nouriſhes the extreme Parts, our very Nails. We find that Cold and Heat will paſs through Braſs, will make their Way through Gold and Silver. We know, by feeling the Outſide of the Cup, whether the Juice within be hot or cold. And, laſtly, Sounds will pierce Stone Walls of Houſes; and ſo will Smells, and Cold, and Heat. The Force of Fire, thrown from without, will paſs through Iron, and ſcorch the Soldiers Limbs, though arm'd about with Coats of Mail. And Tempeſts, riſing from the Earth or Skies, and ſent from thence, will ſtrike through every thing before them; for nothing in Nature is without ſome Void.

Besides, all Seeds that are thrown off from Bodies, are not the ſame in Quality and Shape, nor do therefore they equally agree to Things they ſtrike or act upon; for firſt the Sun burns up and dries the Earth, but thaws and melts the Snows ſo deep upon the Mountain-tops. And Wax will drop when placed before the Fire, and Braſs will run, and Gold diſſolve by Heat; but Skins and Fleſh it ſhrinks

Humor aquæ porro ferrum condurat ab igni,
At coria, & carnem mollit dūrata calore:
Barbigeras oleaſter eò juvat uſque Capellas,
Diffluat ambroſia quaſi verò, & nectare tinctus:
At nihil eſt, Homini fronde hac quod amarius extet.
Denique Amaracinum fugitat Sus & timet omne
Unguentum; nam, ſetigeris ſubus acre venenum'ſt,
Quod nos interdum tanquam recreare videtur.
At contrà Nobis Cœnum teterrima cùm ſit
Spurcities, eadem Subus hæc res munda videtur,
Inſatiabiliter toti ut volvantur ibidem.
Hoc etiam ſupereſt, ipſa quam dicere de re
Aggredior, quod dicendum priùs eſſe videtur.
Multa foramina cùm variis ſint reddita rebus,
Diſſimili inter ſe natura prædita debent
Eſſe, & habere ſuam naturam quæque, viaſque,
Quippe etenim varii ſenſus Animantibus inſunt,
Quorum quiſque ſuam propriè rem percipit in ſe.
Nam penetrare alià ſonitus, aliaque ſaporem
Cernimus è ſuccis, alià Nidoris odores,
Propter diſſimilem naturam, textaque rerum:
Præterea manare aliud per Saxa videtur:
Atq; aliud per Ligna: aliud tranſire per Aurum:
Argentoque foras aliud, Vitroque meare.
Nam fluere hàc Species, illàc Calor ire videtur:
Atque aliis aliud citiùs tranſmittere eâdem.
Scilicet id fieri cogit Natura viarum,
Multimodis varians, ut paullò oſtendimus antè.
Quapropter benè ubi hæc confirmata atque locata
Omnia conſtiterint nobis præpôſta, parata:
Quod ſupereſt, facilè hinc ratio reddetur, & omnis
Cauſa patefiet, quæ Ferri pelliciat vim.

Principio,

and ſhrivels up. Water will harden Steel, made weak by Fire; but ſoftens Skins and Fleſh, made hard by Heat. Leaves of wild Olive pleaſe the bearded Goats, as if they flow'd with Juice of *Nectar* or *Ambroſia*, when nothing is more bitter than that Leaf to us. The Swine fly every ſtrong Perfume, and fear the Smell of every Ointment; 'tis ſharpeſt Poiſon to the Briſtly Race, but cheers our Spirits with a ſweet Delight: And then, to roll in Mud is the moſt odious Filthineſs to us, to them a cleanly Pleaſure; they are never tired of wallowing in the Mire.

BUT before I enter fully upon the Subject before us, it is proper firſt to premiſe, that ſince there are many Pores of little Spaces in all Compound Bodies, it is neceſſary that theſe Paſſages ſhould be of different Natures, and ſhould vary ſeverally in their Size and Figure; for all Creatures are formed with different Organs, every one of which has an Object proper and peculiar to itſelf. Sounds, we perceive, make their Paſſage one Way, and Taſte another, and Smell another, according to the different Nature and Texture of the Things that ſtrike the Senſe. One Thing, we find, will make its Way through Stones, another through Wood, another will pierce through Gold, another through Silver, and another will fly through Glaſs. This the Images flow through, through Theſe the Heat; and ſome Seeds will ſooner pierce through the ſame Pores than others: This is owing to the different Figures of theſe Paſſages, which vary wonderfully in Shape, as we ſaid before. Theſe Things therefore, being fully proved and laid down, and every thing made ready and eaſy for the Grand Inquiry, we ſhall eaſily diſcover the Reaſon, and open every Cauſe that moves and invites the Iron to the Stone.

Principio, fluere è Lapide hoc permulta neceſſe 'ſt
Semina, ſive Æſtum, qui diſcutit Aëra plagis:
Inter qui Lapidem, Ferrumque 'ſt cunque locatus.
Hoc ubi inaniter ſpatium, multuſque vaceſit
In medio locus: extemplo primordia Ferri
In vacuum prolapſa cadunt conjuncta, fit utque
Annulus ipſe ſequatur, eatque ita corpore toto.
Nec res ulla magis primoribus ex elementis
Indupedita ſuis arctè connexa cohæret,
Quàm validi Ferri naturæ frigidus horror.
Quò minùs eſt mirum, quod paullò diximus antè,
Corpora ſi nequeunt de Ferro plura coorta
In vacuum ferri, quin Annulus ipſe ſequatur:
Quod facit & ſequitur donec pervênit ad ipſum
Jam Lapidem, cæciſque in eo compagibus hæſit.
Hoc fit item cunctas in parteis, unde vaceſit
Cunque locus, ſive ex tranſverſo, ſive ſuperne,
Corpora continuò in vacuum vicina feruntur.
Quippe agitantur enim plagis aliunde, nec ipſa
Sponte ſua ſurſum poſſunt conſurgere in auras,
Huc accedit item, quare queat id magis eſſe:

" *Hæc*

AND firſt, [d] Many Seeds or Effluvia are continually flying off from the Stone, and by their Blows diſperſe and drive away the Air that lies between the *Magnet* and the Iron: This Space being empty, and a Void made between, the Corpuſcles of the Iron ruſh out ſuddenly in a Train, all linked together, into this *Vacuum*; ſo that the whole Body of the Iron Ring, to which they are joined, immediately follows; for nothing is made up of Seeds more intangled and connected together, than the cold and tough Subſtance of Iron. And therefore (as we ſaid before) it is the leſs to be wonder'd, if the Seeds cannot fly off from the Iron into the Void, but thoſe before muſt draw on thoſe behind, and the whole Ring follows at laſt; which it does, and continues to move, till it comes cloſe to the Stone, and, fixed by ſecret Bonds, ſticks to it. And theſe Effluvia of the Iron, that lie neareſt the Stone, ruſh into the Void every way, upwards or acroſs, wherever the Space is empty; for they are driven by the Force of other Seeds; nor have they any Power to move upwards by their own natural Motion.

YOU may add another Reaſon to account for

[d] He ſays, that many Corpuſcles flow as well from the Loadſtone as from the Iron, but the greater Quantity and the more ſtrong from the *Magnet*. Hence it comes to paſs that the Air is always diſperſed and driven away to a greater Diſtance round about the Loadſtone, and conſequently that fewer empty little Spaces are made around the Iron; and becauſe when the Iron is placed within the Sphere (as they ſay) of the Air that is removed and driven away, there muſt be a great deal of void Space between that and the Loadſtone: The Corpuſcles of the Iron fly the more freely into that empty Space, and therefore neceſſarily towards the *Magnet*; but thoſe Corpuſcles of the Iron cannot hurry the Way in a great Quantity, without dragging along with them the Particles that adhere to them, and by conſequence the whole Maſs of Iron.

" *Hæc quoque res adjumento, motuque juvatur:*
Quòd ſimul à fronte eſt Annelli rarior Aër
Factus, inanituſque locus magis ac vacuatus.
Continuò fit, uti qui poſt eſt cunque locatus
Aër, à tergo quaſi provehat atque propellat.
Semper enim circum poſitus res verberat Aër.
Sed tali fit uti propellat tempore Ferrum,
Parte quòd ex una ſpatium vacat, & capit in ſe.
Hic, ubi, quem memoro, per crebra foramina Ferri'ſt
Parvas ad parteis ſubtiliter inſinuatus:
Trudit & impellit, quaſi Navim velaque Ventus.
Denique res omnes debent in corpore habere
Aëra, quandoquidem raro ſunt corpore, & Aër
Omnibus eſt rebus circumdatus appoſituſque.
Hic igitur, penitus qui in Ferro'ſt abditus Aër,
Sollicito motu ſemper jactatur, eoque
Verberat Annellum dubio procul: & ciet intùs
Scilicet: atque eôdem fertur, quo præcipitavit
Jam ſemel, & quamquam in partem conamina ſumſit.
Fit quoque ut à Lapide hoc Ferri natura recedat
Interdum, fugere, atque ſequi conſueta viciſſim.
Exſultare etiam Samothracia ferrea vidi:
Et ramenta ſimul Ferri furere intus ahenis
In Scaphiis, lapis hic Magnes cùm ſubditus eſſet:
Uſqueadeo fugere à Saxo geſtire videtur.

Ære

this Experiment, which is, that the [e] Iron is driven forward, and aſſiſted in its Motion from without; for the Air before the Steel being more rare, and the Space between more empty and void than it was, hence it is that the Air that is behind ſtrikes upon the Back of the Ring, and drives and forces it on; for the Air that ſurrounds all Bodies, beats upon them with continual Blows; but then only it drives on the Iron, when the Space is empty on that Side, and fit to receive it. The Air therefore, which I obſerve, entering into the many Pores of the Iron, and ſubtilly conveying itſelf into the little Paſſages, thruſts and forces it on, as a Ship is driven by Wind and Sails.

AND then, all Things muſt contain within ſome Parts of Air; for all Bodies are rare, and full of Pores, and Air ſurrounds and pierces through every thing. This Air therefore that lies concealed in the Body of the Iron, is always toſs'd with violent Motion, and beats upon the Ring, and agitates it within; and ſo the Iron is carried on towards the Void, to which it was moving, and whither all its Force was firſt directed.

BUT ſometimes the Subſtance of the Iron will fly from the *Magnet*; it will withdraw ſometimes, as well as preſs towards it: For I have ſeen little *Samothracian* Rings of Iron, and Filings of Steel, put into a braſen Pot; and the Stone being applied to the Bottom of the Veſſel, the Iron will leap and dance upwards; ſo eager is it to be gone, and avoid the Stone. And this great A-

[e] The Motion of the Iron is aſſiſted by the outward Air, which, ſince it is always driving forward, and that too with more Force, the more there is of it cannot but puſh on the Iron into that Place where there is leaſt Air, and conſequently moſt Void, which muſt be towards the Loadſtone. This Motion is likewiſe aſſiſted by the inward Air, which, by reaſon of its continual Motion and Agitation, is always driving forward, towards that Place that is moſt void and empty.

verſion

Ære interpoſito diſcordia tanta creatur,
Propterea, quia nimirum priùs æſtus ubi Æris
Præcepit, Ferrique vias poſſedit apertas;
Poſterior Lapidis venit æſtus, & omnia plena
Invenit inFerro: neque habet quà tranet, ut antè.
Cogitur offenſare igitur pulſareque fluctu
Ferrea texta ſuo; quo pacto reſpuit ab ſe,
Atque per Æs agitat, ſine eo quæ ſæpe reſorbet.
Illud in his rebus mirari mitte, quòd æſtus
Non valet è Lapide hoc alias impellere item res:
Pondere enim fretæ partim ſtant, quod genus Aurum:
Ac partim Raro quia ſunt cum corpore, ut æſtus
Pervolet intactus, nequeunt impellier uſquam;
Lignea materies in quo genere eſſe videtur.
Inter utraſque igitur Ferri natura locata,
Æris ubi accepit quædam corpuſcula: tum fit,
Impellant ut eam Magneſî ſemina ſaxi.
Nec tamen hæc ita ſunt aliarum rerum aliena,
Ut mihi multa parum genere ex hoc ſuppeditentur,
Quæ memorare queam inter ſe ſingulariter apta.
Saxa vides primùm ſola cooleſcere Calce:
Glutine materies Taurino ita jungitur una,
Ut vitio venæ tabularum ſæpius hiſcant,
Quàm laxare queant compages taurea vincla.
Vitigeni latices in Aquaï fontibus audent

Miſceri,

verſion ariſes from the Interpoſition of the Braſs; for when the Particles of the Braſs have entered and filled up the open Pores of the Iron, then come the Effluvia of the Loadſtone; and finding the Paſſages of the Iron full, and no more open for them to pierce through as before, they beat upon the Bits of Iron, and drive them forward with all their Force. And thus the Particles of the Stone, paſſing through the Braſs, throws the Iron from it, which otherwiſe it would take to its Embrace.

Do not be ſurpriſed [f] to find that the Effluvia of the Stone do not drive away other Bodies from it in the ſame manner, for ſome remain unmoved upon the Account of their Weight; Gold is of this Sort: Others becauſe they are rare, and their Pores are wide, ſo that the Particles that fly off from the Stone paſs through without touching, and therefore can have no Power to move them; of this Kind is the Texture of Wood. The Nature of Iron is placed between theſe Two; and when its Pores are full of thoſe braſen Particles, then it is that the Effluvia of the *Magnet* beat upon it and drive it off.

Nor is the Friendſhip between the Loadſtone and the Steel ſo ſingular a Caſe; I can produce Inſtances of many Things, whoſe Natures are peculiarly fit and ſuited to each other. And firſt, You obſerve that Stones are cemented together only by Lime; and Boards are ſo joined together by Glue, made of the Ears and Genitals of Bulls, that the ſolid Wood of a Table will ſooner ſplit, than the ſtrong Joints of the Glue will ſtart or fall aſunder. Wine will mingle with Spring Water,

[f] The Reaſon why other Bodies do not move in this manner, is becauſe they are too heavy to be moved; or if they are light, they are often too rare; ſo that the Corpuſcles of the *Magnet* find a free and open Paſſage through them.

when

Miſceri, cùm Pix nequeat gravis, & leve Olivum:
Purpureuſque colos Conchylî mergitur unà
Corpore cum Lanæ, dirimi qui non queat uſquam:
Non ſi Neptuni fluctu renovare operam des:
Non, mare ſi totum velit eluere omnibus undis.
Denique res Auro Argentum concopulat unà,
Ærique æs Plumbo ſit uti jungatur ab albo.
Cætera jam quàm multa licet reperire? quid ergo?
Nec tibi tam longis opus eſt ambagibus uſquam,
Nec me tam multam hîc operam conſumere par eſt:
Sed breviter paucis reſtat comprendere multa.
Quorum ita texturæ ceciderunt mutua contra,
Ut cava conveniant plenis hæc illius, illa
Hujuſque: inter ſe junctura horum optima conſtat.
Eſt etiam, quaſi ut annellis, hamiſque plicata
Inter ſe quædam poſſint coplata teneri:
Quod magis in Lapide hoc fieri Ferroque videtur.
Nunc, ratio quæ ſit Morbis, aut unde repente
Mortiferam poſſit cladem conflare coorta
Morbida vis Hominum generi, Pecudumque catervis,
Expediam. Primùm multarum ſemina rerum
Eſſe ſupra docui, quæ ſint vitalia nobis:
Et contrà, quæ ſint morbo, mortique, neceſſe 'ſt
Multa volare; ea cùm caſu ſunt fortè coorta,
Et perturbarunt cælum, fit morbidus Aër.
Atque ea vis omnis Morborum, peſtilitaſque,
Aut extrinſecus, ut nubes nebulæque ſupernè
Per cælum veniunt, aut ipſa ſæpe coorta

when heavy Pitch and ſmooth Oil will not. The purple Colour of the *Murex* incorporates ſo into the Body of Wooll, that it can never be taken out; no, not if you ſtrive to recover it to its native Whiteneſs by all the Waves of the Sea, not if you waſh it in all the Water of the Ocean. There is but one Mineral that will ſoulder Gold and Silver together; and Braſs is joined only by white Lead. How many Things of this Nature might be produced? To what Purpoſe? I would by no means lead you ſo far out of the Way, nor give myſelf ſo much Trouble in ſuch Inquiries. I have many Things yet to explain, but I ſhall be as ſhort as poſſible.

THOSE Things whoſe Textures ſo mutually anſwer to one another, that the Cavities of this Thing agree with the Plenitudes of That, and the Cavities of That with the Plenitudes of This, may be conjoined moſt eaſily, and in the ſtricteſt Manner. And ſome Things may be ſo joined to others, as if they were faſtned together by [g] Hooks and Rings; and in this Manner it is that the Loadſtone ſeems to be connected to the Steel.

Of Plagues.

NOW I ſhall teach from whence Diſeaſes ſpring, and whence ariſe the peſtilential Blaſts, that ſpread their deadly Poiſon, and deſtroy both Man and Beaſt. And firſt (as I have ſaid) The Seeds of many Things are ever flying through the Air; ſome are Sound and Vital to Mankind, and others bring on Diſeaſe and Death: Theſe when they ariſe and taint the Sky, the Air becomes infected. Now the morbid Force of all Diſeaſes, every Peſtilence comes either from without, as Clouds and Miſts fall from the Heavens above; or riſes

[g] On the Surface of the *Magnet* there are Hooks, and of the Surface of the Steel little Rings, which the Hooks catch hold of.

De terra ſurgunt, ubi putrorem humida nacta'ſt,
Intempeſtivis Pluviiſque, & Solibus icta.
Nonne vides etiam cæli novitate, & aquarum
Tentari, procul à patria quicunque domoque
Adveniunt? Ideo quia longè diſcrepat Aër.
Nam quid Britannum cælum differre putamus,
Et quod in Ægypto'ſt, quà mundi claudicat Axis?
Quidve quod in Ponto'ſt differre à Gadibus, atque
Uſque ad nigra virûm, percoctaque ſæcla calore.
Quæ cùm quatuor inter ſe diverſa videmus,
Quatuor à ventis, & cæli partibus eſſe,
Tum color & facies hominum diſtare videntur
Largiter, & morbi generatim ſæcla tenere.
Eſt Elephas morbus, qui propter flumina Nili
Gignitur Ægypto in media, neque præterea uſquam.
Atthide tentantur Greſſus, Oculique in Achæis
Finibus, inde aliis alius locus eſt inimicus
Partibus, ac membris: Varius concinnat id Aër.
Proinde ubi ſe Cælum, quod nobis fortè alienum'ſt,
Commovet, atque Aër inimicus ſerpere cœpit:
Ut nebula, ac nubes paullatim repit, & omne
Quà graditur, conturbat, & immutare coactat.
Fit quoque, ut in noſtrum cùm vênit deniq; cælum,
Corrūmpat, reddatque ſui ſimile atque alienum.
Hæc igitur ſubitò clades nova, peſtilitaſque,
Aut in aquas cadit, aut fruges perſidit in ipſas,
Aut aliòs hominum paſtus, pecudumq; cibatus:
Aut etiam ſuſpenſa manet vis Aëre in ipſo:

from the Earth itſelf, when drenched by fierce unſeaſonable Showers, and pierced by the Sun's ſcorching Beams, it ſends unwholſome Vapours through the Air. Have you not ſeen that thoſe who ſearch out foreign Lands, and leave their Country and their native Homes, contract new Pains from the ſtrange Water, and the Air they breathe? The mighty Difference of the Air occaſions This; for don't you think the Air of *Britain* is widely different from the Air of *Egypt*, where the North Pole is never ſeen? or that the Air of *Pontus* differs from that of *Gades* and *Æthiopia*, where the black Race of Men are thoroughly ſodden with the Sun's Heat? The Four Quarters of the Air, we may ſuppoſe, are different in their Temper and their Quality, becauſe they are oppoſed to the Four Quarters of the Earth, where Men, we find, in every Region widely diſagree in Face and Complexion, and are tormented with Diſeaſes peculiar to the Countries where they live.

The Leproſy was known firſt in *Egypt*, near the River *Nile*, and no where elſe. The *Athenians* are tortured with the Gout, the *Achæans* with ſore Eyes. So every Country is an Enemy to one Part and Member of the Body or other; and This muſt be imputed to the Air.

And when the morbid peſtilential Air of a Country, remote from us, moves from its firſt Abode, and the fatal Vapour begins to advance, it creeps firſt by degrees like a Cloud or Miſt, and diſturbs and changes every thing as it goes; and when it comes to the Climate where we live, it corrupts every thing, and makes it like itſelf, and therefore deadly and deſtructive to Us.

This waſting Plague, theſe ſad infectious Blaſts, fall either in the Water, or fix upon the Fruits or other Food of Men, or on the Provender of Cattle; or they may hang ſuſpended in the Air

Et cùm ſpiranteis miſtas hinc ducimus auras,
Illa quoque in corpus pariter ſorbere neceſſe'ſt.
Conſimili ratione venit Bubus quoque ſæpe
Peſtilitas, etiam pecubus balantibus ægror.
Nec refert utrum nos in loca deveniamus
Nobis adverſa, & cæli mutemus amictum:
An cælum nobis ultrò natura cruentum
Deferat, aut aliquid, quo non conſuevimus uti:
Quod nos adventu poſſit tentare recenti.
Hæc ratio quondam morborum, & mortifer æſtus
Finibu' Cecropiis funeſtos reddidit agros,
Vaſtavitque vias, exhauſit civibus urbem.
Nam penitus veniens Ægypti è finibus ortus,
Aëra permenſus multum, campoſq; natanteis,
Incubuit tandem populo Pandionis: omnes
Inde catervatim morbo mortique dabantur.
Principiò, caput incenſum fervore gerebant:
Et dupliceis oculos ſuffuſa luce rubenteis.
Sudabant etiam fauces intrinſecus atro
Sanguine, & ulceribus vocis via ſepta coibat;
Atque animi interpres manabat lingua cruore,
Debilitata malis, motu gravis, aſpera tactu:
Inde, ubi per fauceis pectus complerat, & ipſum
Morbida vis in cor mæſtum confluxerat ægris:
Omnia tum verò vitaï clauſtra lababant.
Spiritus ore foras tetrum volvebat odorem,
Rancida quo perolent projecta cadavera ritu.
Atque animi prorſum vires totius, & omne

Languebat

Air above, that when we draw our Breath we needs muſt ſuck this Poiſon, mingled with it, into our Bodies. In the ſame Manner the Peſtilence ſeizes on the Cattle, and the Contagion infects the Sheep. And the Danger is the ſame, whether we change our Climate, and travel into a Country where the Air is pernicious to us; or whether Nature of her own accord brings the cruel Infection from abroad, or introduces a Diſeaſe we are not uſed to, which upon its firſt Approach may prove hurtful to Us.

The Plague of Athens.

ONCE ſuch a Plague as This, ſuch deadly Blaſts, poiſon'd the Coaſts of [h] *Athens*, founded by *Cecrops:* It raged through every Street, unpeopled all the City; for coming from far (from *Egypt*, where it firſt began) and having paſſed through a long Tract of Air, and o'er the wide Sea, it fixed at laſt upon the Subjects of King *Pandion*. Men ſoon, by Heaps, fell Victims to the Rage of Death and the Diſeaſe.

THE Head was firſt attack'd with furious Heats, and then the Eyes turn'd bloodſhot and inflamed; the Jaws within ſweated with black Bloods; the Throat (the Paſſage of the Voice) was ſtopt by Ulcers; the Tongue (the Interpreter of the Mind) o'erflowed with Gore, and, faulter'd with the Diſeaſe, felt rough, and ſcarce could move. And when the Poiſon, through the Jaws, had filled the Breaſt, and flowed into the miſerable Stomach, then all the Springs of Life began to fail; the Breath ſent out a filthy Smell abroad, like the rank Stench of rotten Carcaſes; the Powers of all the Soul and all the Body flag

[h] He deſcribes that memorable Plague that broke out in *Attica*, in the firſt Year of the *Peloponneſian* War, and waſted the whole Country, as well as the City of *Athens*, called *Cecropid*, from *Cecrops* who built it. This Plague is no leſs accurately than elegantly deſcribed by *Thucydides*, who was himſelf both a Spectator and Sharer of it.

Languebat corpus, lethi jam limine in ipſo.
Intolerabilibuſque malis erat anxius anguor
Aſſiduè comes, & gemitu commiſta querela,
Singultuſque frequens noctem perſæpe, diemque,
Conripere aſſiduè nervos & membra coactans,
Diſſolvebat eos, defeſſos antè, fatigans.
Nec nimio cuiquam poſſes ardore tueri
Corporis in ſummo ſummam ferviſcere partem:
Sed potiùs tepidum manibus proponere tactum,
Et ſimul ulceribus quaſi inuſtis omne rubere
Corpus, ut eſt per membra Sacer cùm diditur ignis.
Intima pars homini verò flagravit ad oſſa:
" *Flagravit ſtomacho flamma, ut fornacibus intùs,*
Nil adeo poſſet cuiquam leve, tenueque membris
Vertere in utilitatem: ad ventum & frigora ſemper
In fluvios partim gelidos ardentia morbo
Membra dabant, nudum jacientes corpus in undas.
Multi præcipites lymphis putealibus altè
Inciderunt, ipſo venientes ore patente.
Inſedabiliter ſitis arida corpora merſans
Æquabat multum parvis humoribus imbrem.
    Nec requies erat ulla mali, defeſſa jacebant
Corpora, muſſabat tacito Medicina timore,
Quippe patentia cùm totas ardentia nocteis
Lumina verſarent oculorum expertia ſomno,
Multaq; præterea mortis tum ſigna dabantur,
Perturbata Animi mens in mœrore, metuque,
Triſte ſupercilium, furioſus voltus, & acer,
Sollicitæ porro plenæque ſonoribus aures,
Creber ſpiritus, aut ingens, raròque coortus,
Sudoriſq; madens per collum ſplendidus humos,
Tenuia ſputa, minuta, croci contincta colore,
Salſaque per fauceis raucas vix edita tuſſi:
In manibus verò nervi trahier, tremere artus:

and grow faint, as in the Gates of Death. To theſe innumerable Evils followed cloſe a ſad Diſtreſs and Sinking of the Mind, loud Sighs with bitter Moans; and frequent Sobbings, all the Day and Night, twitch'd and convulſed the Nerves and every Limb, and looſen'd every Joint, and ſorely rack'd the Wretches, tired out with Pains before. Yet you could not perceive, by the Touch, that the Surface of the Body was inflamed with any extraordinary Heat; it felt only warm to the Hand, and looked red all over with burning Puſtules, as when the *Sacred Fire* ſpreads o'er the Limbs: But all within was in a Flame, that pierced the very Bones; the Heat raged in the Stomach, as in a Furnace; no Garment, ever ſo light or thin, could be endured upon their Limbs; they ruſhed into the Wind and Cold; ſome plunged their Bodies, ſcorched with the Diſeaſe, in Rivers, and naked threw themſelves in chilling Streams; ſome ran with open Mouths, and headlong leap'd into deep Wells; the parching Thirſt, inſatiable, ſo burnt their Bodies, it made whole Showers of Water ſeem no more than a few Drops.

THE Pain was without Intermiſſion, without End; the Body lay quite ſpent, ſtretched out; the burning Eyes wide open, and, without Sleep for many a reſtleſs Night, rolled dreadfully about. The Phyſician mutters to himſelf in ſilent Fear, and leaves the Patient in Deſpair, for many Signs of coming Death appeared: The Mind diſtracted with Dread and Horror; a ſtern Brow; a Countenance fierce and furious; the Ears tormented with a buzzing Noiſe; the Breath thick, or deep and ſeldom drawn; a frothy Sweat, flowing in Abundance over the Neck; the Spittle thin and dry, and yellow as Saffron, and the ſalt Matter could ſcarce be brought up through the Jaws by coughing; a Contraction of the Nerves in the

A pedibuſque minutatim ſuccedere frigus
Non dubitabat, item ad ſupremum denique tempus
Compreſſæ nares, naſi primoris acumen
Tenue, cavati oculi, cava tempora, frigida pellis,
Duraque, inhorrebat rictum, frons tenta minebat:
Nec nimiò rigida poſt ſtrati morte jacebant:
Octavoque ferè candenti lumine ſolis,
Aut etiam nona reddebant lampade vitam.
Quorum ſiquis (ut eſt) vitârat funera lethi,
Ulceribus tetris, & nigra proluvie alvi;
Poſteriùs tamen hunc tabes lethumque manebat:
Aut etiam multus capitis cum ſæpe dolore
Conruptus ſanguis plenis ex naribus ibat:
Huc hominis totæ vires corpuſque fluebat.
Profluvium porro qui tetri ſanguinis acre
Exierat, tamen in nervos huic morbus & artus
Ibat, & in parteis genitaleis corporis ipſas.
Et graviter partim metuentes limina lethi
Vivebant ferro privati parte virili:
Et manibus ſine nonnulli pedibuſque manebant
In vita tamen, & perdebant lumina partim:
Uſqueadeo mortis metus his inceſſerat acer.
Atque etiam quoſdam cepere oblivia rerum
Cunctarum, neque ſe poſſent cognoſcere ut ipſi.
Multaque humi cùm inhumata jacerent corpora ſupra
Corporibus, tamen alituum genus atque ferarum
Aut procul abſiliebat, ut acrem exiret odorem:
Aut, ubi guſtârat, languebat morte propinqua.
Nec tamen omnino temerè illis ſolibus ulla
Comparebat avis, nec noctibus ſæcla ferarum
Exibant ſylvis: Languebant pleraque morbo,
Et moriebantur: cùm primis fida canum vis
Strata viis animam ponebat in omnibus ægram.
Extorquebat enim vitam vis morbida membris.

Incomitata

Hands, and a Trembling over all the Limbs, and a Coldneſs creeping up gradually from the Feet; the Noſtrils pinched in, as at the Point of Death; the Noſe ſharp; the Eyes ſunk; the Temples hollow; the Skin cold and hard; a frightful Diſtortion of the Mouth, and the Skin of the Forehead ſtretched and ſhining. Nor did the Wretches lie long under the cold Hands of Death, for they expired commonly upon the eighth, or at fartheſt upon the ninth Day.

But if any of the Infected, as ſome did, eſcaped with Life, either the filthy Ulcers breaking, or by a moſt offenſive Looſeneſs, they fell at laſt into a Conſumption, and then died; or Streams of corrupted Blood, with grievous Head-ach, flowed from his ſtuffed Noſtrils, and thus his Strength and Life ran out, and the Wretch bled to Death. Such as eſcaped a ſharp Flux of filthy Blood at the Noſe, the Poiſon pierced into their Nerves and Limbs, and ſeized upon their very Genitals; and ſome were ſo terrified at the Approach of Death, that they ſuffered the Virile Member to be cut off, to preſerve Life. Some remained alive without Hands and Feet, and ſome loſt their Eyes; ſo terrible was the Fear of Death to theſe miſerable Wretches. Some were ſeized with an intire Forgetfulneſs of every thing; they did not ſo much as know themſelves.

When Heaps of Bodies lay one upon another, unburied, upon the Ground, yet the Birds of Prey, and the wild Beaſts, either kept at a Diſtance to avoid the noiſome Stench, or if they taſted they ſoon died. At that Time no Birds appeared abroad in the Day, nor did the wild Beaſts leave the Woods by Night; many of them were infected with the Diſeaſe, and fell down dead; the faithful Dogs eſpecially lay gaſping out their infected Breath in every Street, for the Poiſon drove

Incomitata rapi certabant funera vaſta:
Nec ratio remedî communis certa dabatur:
Nam quod alîs dederat vitaleis Aëris auras
Volvere in ore licere, & cæli templa tueri:
Hoc aliis erat exitio, lethumque parabat.

Illud in his rebus miſerandum & magnopere unum
Ærumnabile erat, quòd ubi ſe quiſque videbat
Implicitum morbo, morti damnatus ut eſſet,
Deficiens animo mæſto cum corde jacebat
Funera reſpectans, animam & mittebat ibidem.

Idque vel in primis cumulabat funere funus:
Quippe etenim nullo ceſſabant tempore apiſci
Ex aliis alios avidi contagia morbi:
Nam quicunque ſuos fugitabant viſere ad ægros,
Vitaï nimiùm cupidi, mortiſque timentes,
Pœnibat paullò poſt turpi morte malaque
Deſertos, opis experteis, incuria mactans,
Lanigeras tanquam pecudes, & bucera ſæcla.

Qui fuerant autem præſtò, contagibus ibant,
Atque labore, pudor quem tum cogebat obire,
Blandaque laſſorum vox miſta voce querelæ.
Optimus hoc lethi genus ergo quiſque ſubibat:
Inque aliîs alium populum ſepelire ſuorum
Certantes, lacrymis laſſi luctuque redibant.
Inde bonam partem in lectum mœrore dabantur:
Nec poterat quiſquam reperiri, quem neq; morbus,
Nec mors, nec luctus tentaret tempore tali.

Præterea,

out Life from every Limb. The many Funerals of the Dead were hurried away without Order, and unattended. Nor was there any certain Remedy to be applied; for what was of Service to ſome, and relieved the Patient, and preſerved Life, was fatal and brought Death to others.

BUT the moſt wretched and deplorable Thing of all, at this Time, was, that when once a Perſon found himſelf infected with the Diſeaſe, as if the Sentence of Death had paſſed upon him, his Spirits failed him, he fell into Melancholy and Deſpair, thought of nothing but Death, and ſo gave up the Ghoſt.

AND Funerals were heaped one upon another, becauſe the fierce Contagion of the Diſeaſe inceſſantly raged, and carried on the Infection. And if any one, too fond of Life, and fearing to die, avoided to viſit the miſerable Sick, the ſame Want of Help was ſoon his own Puniſhment; he died in a filthy and deplorable Manner, abandon'd, and without Aſſiſtance, and periſhed by Neglect, like the wretched Beaſts of the Field.

AND Thoſe who were compell'd by Shame, and by the moving Cries and piteous Moans of their Friends, to attend them in their Diſtreſs, were ſeized by the Infection, and died by the Diſeaſe and the Fatigue. Indeed the moſt Pious among them loſt their Lives in this manner: And when they had endeavoured to bury the Bodies of whole Families of their Friends, among thoſe of the Friends of others, they returned, wearied with Grief and Weeping, and moſt of them took to their Beds for Sorrow. And there was not One to be found who, in this calamitous Time, had not grievouſly ſuffered, either by the Diſeaſe, or by Death, or by the moſt bitter Pain and Anguiſh of Mind.

Præterea, jam paſtor, & armentarius omnis,
Et robuſtus item curvi moderator aratri,
Languebant, penituſque caſis contruſa jacebant
Corpora, paupertate & morbo dedita morti.
Exanimis pueris ſuper exanimata parentum
Corpora nonnunquam poſſes, retroque videre
Matribus, & patribus natos ſuper edere vitam:
Nec minimum partim ex agris ægroris in urbem
Confluxit, languens quem contulit Agricolarum
Copia, conveniens ex omni morbida parti.
Omnia complebant loca tectaque quò mage eos tum
Confertos ita acervatim mors accumulabat.
Multa ſiti proſtrata viam per, proque voluta
Corpora ſilanos ad aquarum ſtrata jacebant,
Intercluſa anima nimia ab dulcedine aquaï.
Multaq; per populi paſſim loca promta, viaſq;
Languida ſemianimo tum corpore membra videres,
Horrida pædore, & pannis cooperta perire
Corporis inluvie: Pellis ſuper oſſibus una,
Ulceribus tetris prope jam, ſordique ſepulta.
Omnia deniq; ſancta Deûm delubra replêrat
Corporibus mors exanimis, onerataque paſſim
Cuncta cadaveribus Cæleſtum templa manebant:
Hoſpitibus loca quæ complerant Æditnentes.
Nec jam relligio Divûm, nec Numina magni
Pendebantur: Enim præſens Dolor exſuperabat.
Nec mos ille Sepulturæ remanebat in urbe,
Ut priùs hic populus ſemper conſuerat humari.
Perturbatus enim totus trepidabat, & unus

BESIDES, the Shepherds and the Herdſmen, and the luſty Ploughman pined away with the Infection; their Bodies lay miſerably ſtretched out in their cloſe narrow Huts, and died of Poverty and the Diſeaſe. You might frequently ſee the dead Parents lying over their dead Children, and again, the Children expiring upon the Bodies of their wretched Mothers and Fathers.

NOR was it a ſmall Addition to this Plague that was brought from the Country to the City; for the infected Peaſants flock'd hither in Multitudes from all Parts, and carried the Sickneſs along with them. They filled all the Houſes, and all Places; and as they were pent up cloſe together, Death had the greater Power to ſlay them on Heaps. Many Bodies lay along in the Streets, gaſping for Thirſt; and rolling to the publick Conduits, they drank inſatiably, and were ſuffocated with Water: Others you might ſee in the Highways and common Places, languiſhing, with their Bodies half dead, horrible with Filth, cover'd with Rags, and rotting with the Corruption of the Limbs; there was nothing but Skin upon the Bones, and that putrefied with eating Ulcers, and buried in Naſtineſs.

AND laſtly, Death had filled all the Temples of the *Gods* with dead Bodies, all the Shrines of the celeſtial Deities were loaded every where with Carcaſes. The Prieſts furniſhed theſe Places with ſuch wretched Gueſts. Nor was there any Reverence paid to the *Gods*, their Divinities were no more regarded; for the preſent Calamity overcame every thing.

NOR did the People any longer obſerve that Cuſtom of Sepulture they had ever followed, which was, to bury their Dead in the City; they were all diſtracted and amazed, and every one

buried

Quiſque ſuum pro re conſortem mæſtus humabat.
Multaque vis ſubita, & paupertas horrida ſuaſit.
Namque ſuos conſanguineos aliena rogorum 1281
Inſuper inſtructa ingenti clamore locabant,
Subdebantque faceis, multo cum ſanguine ſæpe
Rixantes potiùs quàm corpora deſererentur.

buried his wretched Friend as the Exigency of Things would permit.

AND ſudden Rage, and dreadful Poverty, drove Men into many outrageous Actions: They would place their Relations, with violent Outcries, upon the Funeral Piles that were raiſed for others, and light the Fire; and often quarrel, with much Loſs of Blood, rather than forſake the Bodies of their Friends.

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